



THE HEALTHY  
*Heart*  
HANDBOOK FOR WOMEN



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
National Institutes of Health  
National Heart, Lung, and Blood Institute

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Women &  
Heart Disease

The National Heart, Lung, and Blood Institute would like to express its gratitude to all of the women whose pictures and stories appear in this handbook. They have shared their stories from the heart to help other women understand that heart disease is not just a statistic—it is a disease that affects the lives of real women, of all ages and backgrounds, in every community in our country. We hope that these stories of courage and healing will touch readers, and inspire them to act to protect their own health. Thank you!



THE HEALTHY *heart* HANDBOOK FOR WOMEN



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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
National Institutes of Health  
National Heart, Lung, and Blood Institute

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"WHEN I HAD BREAST CANCER, MY  
DOCTORS AND I WERE SO FOCUSED ON  
BEATING IT THAT I DIDN'T EVEN REALIZE  
MY RISK FOR ANOTHER CONDITION:  
HEART DISEASE. A FEW YEARS AGO I  
HAD AN ANGINA ATTACK, WHICH  
WAS A WAKE-UP CALL FOR  
ME. I TALKED WITH MY  
DOCTORS, AND I NOW  
UNDERSTAND MY RISK  
FOR HEART DISEASE,  
WHICH IS SOMETHING  
I DON'T THINK MANY  
WOMEN DO."

— Marsha Oakley, age 54



## *about* THIS NEW EDITION



Research on women's heart health is exploding.

Nearly every week, it

seems, the media report on new ways to prevent and treat heart disease in women—and it can be hard to keep track of it all. In this updated edition of *The Healthy Heart Handbook for Women*, we have put together all of this new knowledge in one, easy-to-use handbook. This guide is part of the *The Heart Truth*, a national public awareness campaign on women and heart disease sponsored by the National Heart, Lung, and Blood Institute (NHLBI) and other groups. (See “Getting the Word Out” on page 8.)



*The Healthy Heart Handbook for Women* will give you new information on women's heart disease and practical suggestions for reducing your own personal risk of heart-related problems. You'll find updated information on preventing and controlling high blood pressure, keeping your blood cholesterol levels healthy, and using menopausal hormone therapy. There are also new tips on maintaining a healthy weight, following a nutritious and tasty eating plan, and finding enjoyable ways to get more physical activity. You'll also find out how to get your whole family involved in heart healthy living. The handbook also includes information about the warning signs of heart attack, as well as how to act quickly to get help.

So welcome to *The Healthy Heart Handbook for Women*—your one-stop source for the latest information on women's heart disease and heart health.

# THE *heart* TRUTH

*W*hen you hear the term “heart disease,” what is your first reaction? Like many women, you may think, “That’s a man’s disease.” or “Not my problem.” But here is *The Heart Truth*: Heart disease is the #1 killer of women in the United States. Most women don’t know this. But it is vital that you know it—and know what it means for you.

## **Some surprising facts:**

- One in 2 women in the United States dies of heart disease or stroke, while 1 in 30 dies of breast cancer.
- Thirty-eight percent of women will die within 1 year after having a heart attack.
- Within 6 years of having a heart attack, about 46 percent of women become disabled with heart failure. Two-thirds of women who have a heart attack fail to make a full recovery.

The fact is, if you’ve got a heart, heart disease could be your problem. Fortunately, it’s a problem you can do something about. This handbook will help you find out your own risk of heart disease and take steps to prevent and control it.

For women in midlife, taking action is particularly important. For once a woman reaches menopause, her risks of heart disease and heart attack jump dramatically. One in 14 women between the ages of 45 and 64 has some form of heart disease, and this increases to 1 in 7 women over 65.

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## **One in 2 women in the United States dies of heart disease or stroke, while 1 in 30 dies of breast cancer.**

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You still may be thinking, “But this isn’t about me. I don’t have heart disease.” But you may have conditions or habits that can lead to heart disease, such as overweight, cigarette smoking, or not enough physical activity. You may already know about these and other “risk factors” for heart disease. You may know which ones you personally have. What you may not know, though, is that if you have even one risk factor, you are much more likely to develop heart disease, with its many serious consequences. A damaged heart can damage your life, by interfering with enjoyable activities and even your ability to do simple things, such as taking a walk or climbing steps.

But now for the good news: You have tremendous power to prevent heart disease—and you can start today. By learning about your own personal risk factors and by making healthful changes in your diet, physical activity, and other daily habits, you can greatly reduce your risk of developing heart-related problems. Even if you already have heart disease, you can take steps to lessen its severity.

So use this handbook to learn more about heart healthy living. Talk with your physician to get more answers. Start taking action today to protect your heart. As one woman doctor put it: “Heart disease is a ‘now’ problem. Later may be too late.”

## GETTING THE *word* OUT

Chances are, you've been seeing and hearing a lot of information lately on women and heart disease. That's because an exciting public awareness campaign is underway to help women protect their heart health. The purpose of this nationwide campaign, called *The Heart Truth*, is to spread the word that heart disease is a women's issue.



*The Heart Truth* warns women about heart disease and encourages them to take action against its risk factors. The message is paired with an arresting visual—the Red Dress—the national symbol for women and heart disease awareness. The symbol links a woman's focus on her "outer self" to the need to also focus on her "inner self," especially her heart health. The Red Dress works as a visual red alert to convey the message that "Heart Disease Doesn't Care What You Wear—It's the #1 Killer of Women."

*The Heart Truth* campaign is sponsored by the National Heart, Lung, and Blood Institute in partnership with many national and community health organizations around the country. So the next time you come across a red dress, or a newspaper article or local speaker on women and heart disease, take the time to get the message. *The Heart Truth*: It could save your life.

For more information, visit the campaign Web pages at **[www.hearttruth.gov](http://www.hearttruth.gov)**.



Women &  
Heart Disease

## WHAT IS *heart* DISEASE?

Coronary heart disease is the main form of heart disease. It is a disorder of the blood vessels of the heart that can lead to heart attack. A heart attack happens when an artery becomes blocked, preventing oxygen and nutrients from getting to the heart. Often referred to simply as heart disease, it is one of several cardiovascular diseases, which are diseases of the heart and blood vessel system. Other cardiovascular diseases include stroke, high blood pressure, angina (chest pain), and rheumatic heart disease.

One reason some women aren't too concerned about heart disease is that they think it can be "cured" with surgery.

This is a myth. Heart disease is a lifelong condition—once you get it, you'll always have it. True, procedures such as bypass surgery and angioplasty can help blood and oxygen flow to the heart more easily. But the arteries remain damaged, which means you are more likely to have a heart attack. What's more, the condition of your blood vessels will steadily worsen unless you make changes in your daily habits. Many women die of complications from heart disease, or become permanently disabled. That's why it is so vital to take action to prevent and control this disease.



## *women* **AT RISK**

Risk factors are conditions or habits that make a person more likely to develop a disease. They can also increase the chances that an existing disease will get worse. Important risk factors for heart disease that you can do something about are cigarette smoking, high blood pressure, high blood cholesterol, overweight, physical inactivity, and diabetes.

Some risk factors, such as age and family history of early heart disease, can't be changed. For women, age becomes a risk factor at 55. After menopause, women are more apt to get heart disease, in part because their body's production of estrogen drops. Women who have gone through early menopause, either naturally or because they have had a hysterectomy, are twice as likely to develop heart disease as women of the same age who have not yet gone through menopause. Another reason for the increasing risk is that middle age is a time when women tend to develop risk factors for heart disease.

Family history of early heart disease is another risk factor that can't be changed. If your father or brother had a heart attack before age 55, or if your mother or sister had one before age 65, you are more likely to get heart disease yourself.

While certain risk factors cannot be changed, it is important to realize that you do have control over many others. Regardless of your age, background, or health status, you can lower your risk of heart disease—and it doesn't have to be complicated. Protecting your heart can be as simple as taking a brisk walk, whipping up a good vegetable soup, or getting the support you need to maintain a healthy weight.



SUSAN

AGE: 41

"I started looking at my life and the risk factors I had. I realized that I couldn't do anything about my family history, but I also saw some things that I could change."

### **Every Risk Factor Counts**

Some women believe that doing just one healthy thing will take care of all of their heart disease risk. For example, they may think that if they walk or swim regularly, they can still smoke and stay fairly healthy. Wrong! To protect your heart, it is vital to make changes that address each risk factor you have. You can make the changes gradually, one at a time. But making them is very important.

Other women may wonder: If I have just one risk factor for heart disease—say, I'm overweight or I have high blood cholesterol—aren't I more or less "safe"? Absolutely not. Each risk factor greatly increases a woman's chance of developing heart disease.

But having more than one risk factor is especially serious, because risk factors tend to "gang up" and worsen each other's effects. So, the message is clear: Every woman needs to take her heart disease risk seriously—and take action now to reduce that risk.

## DID *you* KNOW?

Many women think that breast cancer is a bigger threat than heart disease. But the leading causes of death for American women in the year 2002\* were:

■ Heart Disease	356,014
■ Cancer (all types)	268,503
• Lung	67,542
• Breast	41,514
• Colorectal	28,240
• Pancreatic	15,387
• Ovarian	14,682
• Uterine	6,853
• Cervical	3,952
• Others	90,333
■ Stroke	100,050
■ Chronic obstructive pulmonary disease	64,103
■ Alzheimer's Disease	41,877
■ Diabetes	38,948
■ Accidents	37,485
■ Pneumonia/influenza	36,763

\* most recent year data are available

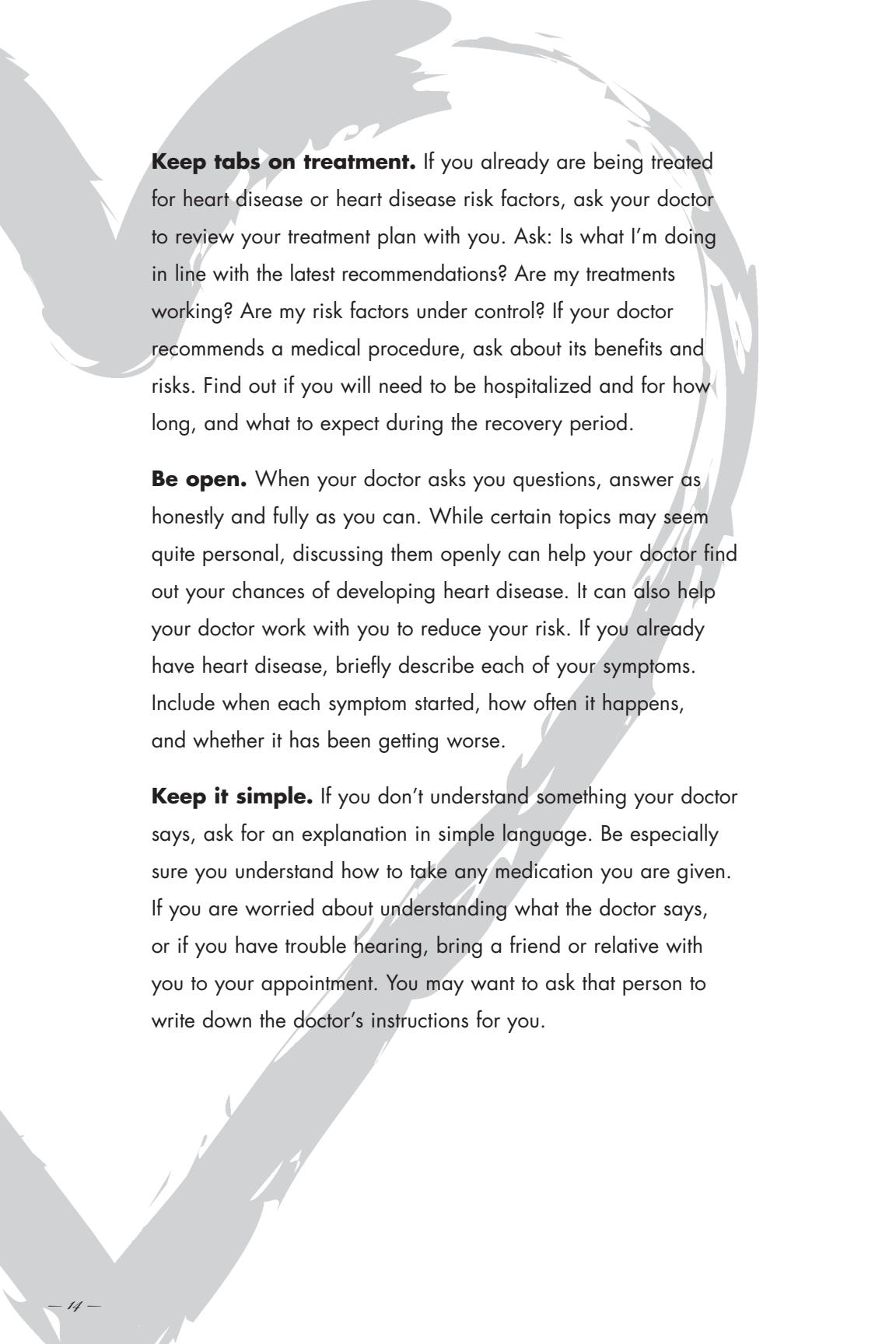
## FINDING OUT *your* RISK

*T*he first step toward heart health is becoming aware of your own personal risk for heart disease. Some risks, such as smoking cigarettes, are obvious: every woman knows whether or not she smokes. But other risk factors, such as high blood pressure or high blood cholesterol, generally don't have obvious signs or symptoms. So you'll need to gather some information to create your personal "heart profile."

### **You and Your Doctor: A Heart Healthy Partnership**

A crucial step in determining your risk is to see your doctor for a thorough checkup. Your physician can be an important partner in helping you set and reach goals for heart health. But don't wait for your physician to mention heart disease or its risk factors. Many doctors don't routinely bring up the subject with women patients. Here are some tips for establishing good, clear communication between you and your doctor:

**Speak up.** Tell your doctor you want to keep your heart healthy and would like help in achieving that goal. Ask questions about your chances of developing heart disease and how you can lower your risk. (See "Questions To Ask Your Doctor" on page 15.) Also ask for tests that will determine your personal risk factors. (See "Check It Out" on page 16.)



**Keep tabs on treatment.** If you already are being treated for heart disease or heart disease risk factors, ask your doctor to review your treatment plan with you. Ask: Is what I'm doing in line with the latest recommendations? Are my treatments working? Are my risk factors under control? If your doctor recommends a medical procedure, ask about its benefits and risks. Find out if you will need to be hospitalized and for how long, and what to expect during the recovery period.

**Be open.** When your doctor asks you questions, answer as honestly and fully as you can. While certain topics may seem quite personal, discussing them openly can help your doctor find out your chances of developing heart disease. It can also help your doctor work with you to reduce your risk. If you already have heart disease, briefly describe each of your symptoms. Include when each symptom started, how often it happens, and whether it has been getting worse.

**Keep it simple.** If you don't understand something your doctor says, ask for an explanation in simple language. Be especially sure you understand how to take any medication you are given. If you are worried about understanding what the doctor says, or if you have trouble hearing, bring a friend or relative with you to your appointment. You may want to ask that person to write down the doctor's instructions for you.

## QUESTIONS TO ASK YOUR *doctor*

Getting answers to these questions will give you vital information about your heart health and what you can do to improve it. You may want to bring this list to your doctor's office.

- 1.** What is my risk for heart disease?
- 2.** What is my blood pressure? What does it mean for me, and what do I need to do about it?
- 3.** What are my cholesterol numbers? (These include total cholesterol, LDL or "bad" cholesterol, HDL or "good" cholesterol, and triglycerides.) What do they mean for me, and what do I need to do about them?
- 4.** What are my "body mass index" and waist measurement? Do they indicate that I need to lose weight for my health?
- 5.** What is my blood sugar level, and does it mean I'm at risk for diabetes?
- 6.** What other screening tests for heart disease do I need? How often should I return for checkups for my heart health?
- 7.** What can you do to help me quit smoking?
- 8.** How much physical activity do I need to help protect my heart?
- 9.** What is a heart healthy eating plan for me? Should I see a registered dietitian or qualified nutritionist to learn more about healthy eating?
- 10.** How can I tell if I'm having a heart attack?

# *check* IT OUT:

## Tests That Can Help Protect Your Heart Health

Ask your doctor to give you these tests. Each one will give you valuable information about your heart disease risk.

### *Lipoprotein Profile*

**What:** A blood test that measures total cholesterol, “good” and “bad” cholesterol, and triglycerides, another form of fat in the blood. The test is given after a 9- to 12-hour fast.

**Why:** To find out if you have high blood cholesterol and/or high triglyceride levels. Both are risk factors for heart disease.

**When:** All healthy adults should have their blood cholesterol levels checked at least once every 5 years. Depending on the results, your doctor may want to repeat the test more frequently.

### *Blood Pressure*

**What:** A simple, painless test using an inflatable arm cuff.

**Why:** To find out if you have high blood pressure or prehypertension. Both are risk factors for heart disease.

**When:** At least every 2 years, or more often if you have high blood pressure or prehypertension.



### ***Fasting Plasma Glucose***

**What:** The preferred test for diagnosing diabetes. After you have fasted overnight, you will get a blood test the following morning.

**Why:** To find out if you have diabetes or are likely to develop the disease. Fasting plasma glucose levels of more than 126 mg/dL on two tests on different days mean that you have diabetes. Levels between 100 and 125 mg/dL mean that you're at high risk for developing diabetes. Diabetes is an important risk factor for heart disease and other medical disorders.

**When:** At least every 3 years, beginning at age 45. If you have risk factors for diabetes, you should be tested at a younger age and more often.

### ***Body Mass Index (BMI) and Waist Circumference***

**What:** BMI is a measure of your weight in relation to your height. Waist circumference is a measure of the fat around your middle.

**Why:** To find out whether your body type raises your risk of heart disease. A BMI of 25 or higher means you are overweight; a BMI of 30 or higher means you are obese. Both overweight and obesity are risk factors for heart disease. For women, a waist measurement of more than 35 inches increases the risk of heart disease and other serious health conditions.

**When:** Every 2 years, or more often if your doctor recommends it. There also are several tests that can determine whether you already have heart disease. Ask your doctor whether you need a stress test, an electrocardiogram (EKG or ECG), or another diagnostic test. (See "Screening Tests" on page 96.)

## WHAT'S *your* RISK?

Here is a quick quiz to find out your risk of a heart attack. If you don't know some of the answers, check with your health care provider.

	Yes	No	Don't Know
Do you smoke?			
Is your blood pressure 140/90 mmHg or higher, OR have you been told by your doctor that your blood pressure is too high?			
Has your doctor told you that your total cholesterol level is 200 mg/dL or higher, OR your HDL (good cholesterol) is less than 40 mg/dL?			
Has your father or brother had a heart attack before age 55, OR has your mother or sister had one before age 65?			
Do you have diabetes OR a fasting blood sugar of 126 mg/dL or higher, OR do you need medicine to control your blood sugar?			
Are you over 55 years old?			
Do you have a body mass index (BMI) score of 25 or more? (To find out, see page 35.)			
Do you get less than a total of 30 minutes of physical activity on most days?			
Has a doctor told you that you have angina (chest pains), OR have you had a heart attack?			

If you answered "yes" to any of these boxes, you're at an increased risk of having a heart attack. Read on to learn what you can do to lower your risk.

## MAJOR RISK FACTORS FOR *heart* DISEASE

As important as it is to work closely with your doctor, it is only the first step. To make a lasting difference in your heart health, you'll also need to educate yourself about heart disease and about the kinds of habits and conditions that can raise your risk. It's your heart, and you're in charge. What follows is a basic guide to the most important risk factors for heart disease and how each of them affects a woman's health.

### **Smoking**

Cigarette smoking has been described as "the most important individual health risk in this country." Women who smoke are two to six times more likely to suffer a heart attack than nonsmoking women, and the risk increases with the number of cigarettes smoked each day. Smoking also boosts the risk of stroke.

But heart disease and stroke are not the only health risks for women who smoke. Cigarette smoking greatly increases the chances that a woman will develop lung cancer. In fact, the lung cancer death rate for women is now higher than the death rate for breast cancer. Cigarette smoking is also linked with many other types of cancer, including cancers of the mouth, urinary tract, kidney, and cervix. Smoking also causes most cases of chronic obstructive lung disease, which includes bronchitis and emphysema. If you live or work with others, your "secondhand smoke" can also cause numerous health problems in those individuals.

There is simply no safe way to smoke. Low-tar and low-nicotine cigarettes do not lessen the risks of heart disease or other smoking-related diseases. The only safe and healthful course is not to smoke at all. (For tips on how to quit, see “Kick the Smoking Habit” on page 91.)

## **High Blood Pressure**

High blood pressure, also known as hypertension, is another major risk factor for heart disease, kidney disease, and congestive heart failure. High blood pressure is also the most important risk factor for stroke. Even slightly high levels increase your risk for these conditions.

New research estimates that middle-aged Americans have a *90 percent chance* of eventually developing high blood pressure. High blood pressure is more common and more severe in African American women than it is in white women. Your risk also goes up if you are overweight or have a family history of high blood pressure.

High blood pressure is often called the “silent killer” because it usually doesn’t cause symptoms. As a result, many people pay little attention to their blood pressure until they become seriously ill. The good news is that you can take action to control or prevent high blood pressure, and thereby avoid many life-threatening disorders.

## **What Is Blood Pressure?**

Blood pressure is the amount of force exerted by the blood against the walls of the arteries. Everyone has to have some blood pressure, so that blood can get to all of the body’s organs.

Usually, blood pressure is expressed as two numbers, such as 120/80, and is measured in millimeters of mercury (mmHg). The first number is the systolic blood pressure, the force when the heart beats. The second number, or diastolic blood pressure, is the pressure that exists in the arteries between heartbeats.

Because blood pressure changes often, your health care provider should check it on several different days before deciding whether your blood pressure is too high. Blood pressure is considered “high” when it stays above normal levels over a period of time. (See below.)

**BLOOD PRESSURE: HOW *high* IS HIGH?**

Your blood pressure category is determined by the higher number of either your systolic or your diastolic measurement. For example, if your systolic number is 141 but your diastolic number is 88, your category is hypertension.

	Systolic	Diastolic
Normal	Less than 120	Less than 80
Prehypertension	120-139	80-89
Hypertension	140 or higher	90 or higher

## PREVENTING CONGESTIVE *heart* FAILURE

High blood pressure is the #1 risk factor for congestive heart failure. Heart failure is a life-threatening condition in which the heart cannot pump enough blood to supply the body's needs. Congestive heart failure occurs when excess fluid starts to leak into the lungs, causing tiredness, weakness, and breathing difficulties.

To prevent congestive heart failure, and stroke as well, you must control your high blood pressure to below 140 over 90. If your blood pressure is higher than that, talk with your doctor about

starting or adjusting medication, as well as making lifestyle changes.

To avoid congestive heart failure, controlling your weight is also very important. Being even moderately

overweight increases your risk of developing heart failure.



## **Understanding Risk**

But numbers don't tell the whole story. For example, if you have prehypertension, you are still at increased risk for a heart attack, stroke, or heart failure. Also, if your systolic blood pressure (first number) is 140 or higher, you are more likely to develop cardiovascular and kidney diseases even if your diastolic blood pressure (second number) is not too high. Starting around age 55, women are more likely to develop high systolic blood pressure. High systolic blood pressure *is* high blood pressure. If you have this condition, you will need to take steps to control it. High blood pressure can be controlled in two ways: by changing your lifestyle and by taking medication.

## **Changing Your Lifestyle**

If your blood pressure is not too high, you may be able to control it entirely by losing weight if you are overweight, getting regular physical activity, cutting down on alcohol, and changing your eating habits. A special eating plan called the "DASH" diet can help you lower your blood pressure. DASH stands for "Dietary Approaches to Stop Hypertension." The DASH eating plan emphasizes fruits, vegetables, whole-grain foods, and lowfat dairy products. It is rich in magnesium, potassium, and calcium, as well as protein and fiber. It's low in saturated and total fat and cholesterol, and limits red meat, sweets, and sugar-containing beverages. If you follow the DASH eating plan and also consume less sodium, you are likely to reduce your blood pressure even more. Sodium is a substance that affects blood pressure. It is the main ingredient in salt and is found in many processed foods, such as soups, convenience meals, some breads and cereals, and salted snacks.

For more on the DASH eating plan and how to make other changes that can lower and prevent high blood pressure, see the "Taking Control" section of this handbook.



ROSARIO

AGE: 43

"I have to lose weight and reduce my cholesterol. This is just the beginning of a long battle, and I know it won't be easy, but I know I have to do it."

### ***Taking Medication***

If your blood pressure remains high even after you make lifestyle changes, your doctor will probably prescribe medicine. Lifestyle changes will help the medicine work more effectively. In fact, if you are successful with the changes you make in your daily habits, then you may be able to gradually reduce how much medication you take.

Taking medicine to lower blood pressure can reduce your risk of stroke, heart attack, congestive heart failure, and kidney disease. If you take a drug and notice any uncomfortable side effects, ask your doctor about changing the dosage or switching to another type of medicine.

A recent study found diuretics (water pills) work better than newer drugs to treat hypertension and to prevent some forms of heart disease. If you're starting treatment for high blood pressure, try a diuretic first. If you need more than one drug, ask your doctor about making one a diuretic. And, if you're already on treatment, ask about switching to or adding a diuretic. Diuretics work for most people, but if you need a different drug, other medications are very effective. So talk with your doctor about your total health needs.

A reminder: It is important to take blood pressure medication exactly as your doctor has prescribed it. Before you leave your physician's office, make sure you understand the amount of medicine you are supposed to take each day, and the specific times of day you should be taking it.

## STROKE: *know* THE WARNING SIGNS

Stroke is a medical emergency. If you or someone you know has a stroke, it is important to recognize the symptoms so you can get to a hospital quickly. Getting treatment within 60 minutes can prevent disability. The chief warning signs of a stroke are:

- Sudden numbness or weakness of the face, arm, or leg (especially on one side of the body).
- Sudden confusion, trouble speaking, or understanding speech.
- Sudden trouble seeing in one or both eyes.
- Sudden trouble walking, dizziness, loss of balance or coordination.
- Sudden severe headache with no known cause.

If you think someone might be having a stroke, call 9-1-1 immediately. Also, be sure that family members and others close to you know the warning signs of a stroke. Give them a copy of this list. Ask them to call 9-1-1 right away if you or someone else shows any signs of a stroke.



## **High Blood Cholesterol**

High blood cholesterol is another important risk factor for heart disease that you can do something about. All women should keep their cholesterol levels down to lessen the chances of developing heart disease or having a heart attack.

If you already have heart disease, it is particularly important to lower an elevated blood cholesterol level in order to reduce your high risk for a heart attack. Women with diabetes also are at especially high risk for a heart attack. If you have diabetes, you will need to take steps to keep both your cholesterol and your diabetes under control.

Although young women tend to have lower cholesterol levels than young men, between the ages of 45 and 55, women's levels begin to rise higher than men's. After age 55, this "cholesterol gap" between women and men becomes still wider. Although at older ages, women's overall risk of heart disease continues to be somewhat lower than that of men, the higher a woman's blood cholesterol level, the greater her chances of developing heart disease.

## ***Cholesterol and Your Heart***

The body needs cholesterol to function normally. However, your body makes all the cholesterol it needs. Over a period of years, extra cholesterol and fat circulating in the blood build up in the walls of the arteries that supply blood to the heart. This buildup makes the arteries narrower and narrower. As a result, less blood gets to the heart. Blood carries oxygen to the heart, and if enough oxygen-rich blood cannot reach your heart, you may suffer chest pain. If the blood supply to a portion of the heart is completely cut off, the result is a heart attack.

Cholesterol travels in the blood in packages called lipoproteins. Low-density lipoprotein (LDL) carries most of the cholesterol in the blood. Cholesterol packaged in LDL is often called “bad” cholesterol, because too much LDL in the blood can lead to cholesterol buildup and blockage in the arteries.



Another type of cholesterol is high-density lipoprotein (HDL), known as “good” cholesterol. That’s because HDL helps remove cholesterol from the blood, preventing it from building up in the arteries.

### **Getting Tested**

All women age 20 and older should have their cholesterol levels checked by means of a blood test called a “lipoprotein profile.” Be sure to ask for the test results, so you will know whether or not you need to lower your cholesterol.

Total cholesterol is a measure of the cholesterol in all of your lipoproteins, including LDL and HDL. An LDL level below 100 mg/dL\* is considered “optimal,” or ideal. However, not every woman needs to aim for so low a level. As you can see on the next page, there are four other categories of LDL level. The higher your LDL number, the higher your risk of heart disease. Knowing your LDL number is especially important because it will determine the kind of treatment you may need.

Your HDL number tells a different story. The *lower* your HDL level, the higher your heart disease risk.

Your lipoprotein profile test will also measure levels of triglycerides, which is another fatty substance in the blood. (See “What Are Triglycerides?” on page 28.)

\* Cholesterol levels are measured in milligrams (mg) of cholesterol per deciliter (dL) of blood.

## ***What's Your Number?***

### **Blood Cholesterol Levels and Heart Disease Risk**

#### **Total Cholesterol Level \_\_\_\_\_ Category**

Less than 200 mg/dL \_\_\_\_\_ Desirable

200-239 mg/dL \_\_\_\_\_ Borderline high

240 mg/dL and above \_\_\_\_\_ High

#### **LDL Cholesterol Level \_\_\_\_\_ Category**

Less than 100 mg/dL \_\_\_\_\_ Optimal (ideal)

100-129 mg/dL \_\_\_\_\_ Near optimal/above optimal

130-159 mg/dL \_\_\_\_\_ Borderline high

160-189 mg/dL \_\_\_\_\_ High

190 mg/dL and above \_\_\_\_\_ Very high

#### **HDL Cholesterol Level**

An HDL cholesterol level of less than 40 mg/dL is a major risk factor for heart disease. An HDL level of 60 mg/dL or higher is protective.

## *what* **ARE TRIGLYCERIDES?**

Triglycerides are another type of fat found in the blood and in food. Triglycerides are produced in the liver. When you drink alcohol or take in excess calories, your liver produces more triglycerides. Recent research indicates that triglyceride levels that are borderline high (150-199 mg/dL) or high (200 mg/dL or more) increase your risk of heart disease. To reduce blood triglyceride levels, doctors recommend a low-saturated fat, low-cholesterol diet that also limits carbohydrates. It is also important to control your weight, get more physical activity, and avoid smoking and alcohol. Sometimes, medication is needed.

## **Heart Disease Risk and Your LDL Goal**

In general, the higher your LDL level and the more other risk factors you have, the greater your chances of developing heart disease or having a heart attack. The higher your risk, the lower your LDL “goal” level will be. Here is how to determine your LDL goal:

**Step 1: Count Your Risk Factors.** Below are risk factors for heart disease that will affect your LDL goal. Check to see how many of the following risk factors\* you have:

- Cigarette smoking
- High blood pressure (140/90 mmHg or higher, or if you are on blood pressure medication)
- Low HDL cholesterol (less than 40 mg/dL)\*\*
- Family history of early heart disease (your father or brother before age 55, or your mother or sister before age 65)
- Age (55 or older)

*\* Even though overweight and physical inactivity are not on this list of risk factors to be counted, they are conditions that raise your risk for heart disease and need to be corrected.*

*\*\* If your HDL cholesterol is 60 mg/dL or higher, subtract 1 from your total.*

**Step 2: Find Out Your Risk Score.** If you have two or more risk factors on the above list, you will need to figure out your “risk score.” This score will show your chances of having a heart attack in the next 10 years. To find out your risk score, see “How To Estimate Your Risk” on page 106.

**Step 3: Find Out Your Risk Category.** Use your number of risk factors, risk score, and medical history to find out your category of risk for heart disease or heart attack. Use the table below:

**If You Have \_\_\_\_\_ Your Category Is**

Heart disease, diabetes,

or a risk score of more than 20%\* \_\_\_\_\_ Highest Risk

2 or more risk factors

and a risk score of 10-20% \_\_\_\_\_ Next Highest Risk

2 or more risk factors

and a risk score of less than 10% \_\_\_\_\_ Moderate Risk

0 to 1 risk factor \_\_\_\_\_ Low-to-Moderate Risk

*\* Means that more than 20 of 100 people in this category will have a heart attack within 10 years.*

**A Special Type of Risk**

Some women have a group of risk factors known as “metabolic syndrome,” which is often connected to overweight/obesity and physical inactivity. This cluster of risk factors increases your risk of heart disease, no matter what your LDL cholesterol level.

Women have metabolic syndrome if they have three or more of the following conditions:

- A waist measurement of more than 35 inches
- Triglycerides of 150 or more
- An HDL level of less than 50
- Blood pressure of 130/85 or more (either number counts)
- Blood sugar of 100 or more

If you have metabolic syndrome, you should calculate your risk score and risk category as above. But because having metabolic syndrome adds additional risk, you should make a particularly strong effort to reach and maintain your LDL goal. You should emphasize weight control and physical activity to correct the risk factors of the metabolic syndrome.

### **Your LDL Goal**

The main goal of cholesterol-lowering treatment is to lower your LDL level enough to reduce your risk of heart disease or heart attack. The higher your risk category, the lower your LDL goal will be. To find your personal LDL goal, see the table below:

#### **If You Are in This Risk Category      Your LDL Goal Is**

Highest Risk	Less than 100 mg/dL
Next Highest Risk	Less than 130 mg/dL
Moderate Risk	Less than 130 mg/dL
Low-to-Moderate Risk	Less than 160 mg/dL

Recent studies have added to the evidence suggesting that for LDL cholesterol, lower is better. Because these studies show a direct relationship between lower LDL cholesterol and reduced risk for heart attack, physicians have the option to consider more intensive cholesterol-lowering treatment for people in the higher risk categories for a heart attack. For example, in patients who have a very high risk, such as those who have both heart disease and diabetes, an option is to set the LDL treatment goal at less than 70 mg/dL.

### **How To Lower Your LDL**

There are two main ways to lower your LDL cholesterol—through lifestyle changes alone, or through medication combined with lifestyle changes. Depending on your risk category, the use of these

treatments will differ. Because of the recent studies that showed the benefit of more intensive cholesterol lowering, physicians have the option to start cholesterol medication—in addition to lifestyle therapy—at lower LDL levels than previously recommended for high-risk patients. For information on the updated treatment options and the best treatment plan for your risk category, see the fact sheet, *High Blood Cholesterol: What You Need To Know*, available on NHLBI's Web site at [www.nhlbi.nih.gov/guidelines/cholesterol](http://www.nhlbi.nih.gov/guidelines/cholesterol), and click on the accompanying note about "Information on the ATP III Update."

**Lifestyle Changes.** One important treatment approach is called "TLC," which stands for "Therapeutic Lifestyle Changes." This treatment includes a cholesterol-lowering diet, regular physical activity, and weight management. Every woman who needs to lower her LDL cholesterol should use this TLC program. (For more on the TLC approach, see page 64.) Losing extra weight and getting regular physical activity are especially important for women who have metabolic syndrome.

**Medication.** If your LDL level stays too high even after making lifestyle changes, you may need to take medicine. If you need medication, be sure to use it along with the TLC approach. This will keep the dose of medicine as low as possible, and lower your risk in other ways as well. You will also need to control all of your other heart disease risk factors, including high blood pressure, diabetes, and smoking.

## CHOLESTEROL-LOWERING *medicines*

Your doctor may recommend medication as part of your cholesterol-lowering treatment plan. Following are the most commonly used medicines:

**Statins.** These are the drugs most often prescribed for people who need a cholesterol-lowering medicine. Of all available medications, statins lower LDL cholesterol the most, usually by 20 to 60 percent. Side effects are usually mild, although liver and muscle problems occur rarely. If muscle problems occur, you should contact your doctor promptly.

**Bile Acid Sequestrants.** These medications lower LDL cholesterol by about 10 to 20 percent. Bile acid sequestrants are often prescribed along with a statin to further decrease cholesterol levels. Side effects may include constipation, bloating, nausea, and gas. However, long-term use of these medicines is considered safe.

**Nicotinic Acid.** Nicotinic acid, or niacin, lowers total cholesterol, LDL cholesterol, and triglyceride levels, while also raising HDL cholesterol. While nicotinic acid is available without a prescription, use it under a doctor's care because of possibly serious side effects. In some people, it may inflame peptic ulcers or cause liver problems, gout, or high blood sugar.

**Fibrates.** These drugs can reduce triglyceride levels by 20 to 50 percent, while increasing HDL cholesterol by 10 to 15 percent. They're not very effective for lowering LDL cholesterol. While the drugs usually cause only mild side effects, they can increase the chances of developing gallstones and heighten the effects of blood-thinning drugs.

**Ezetimibe.** This is the first in a new class of cholesterol-lowering agents that interfere with the absorption of cholesterol in the intestine. It can be used alone or in combination with a statin. Side effects may include back and joint pain.

## **Overweight**

A healthy weight is important for a long, vigorous life. Yet about 62 percent of all American women age 20 and older are overweight—about 33 percent of them are obese (extremely overweight). The more overweight a woman is, the higher her risk for heart disease. Overweight also increases the risks for stroke, congestive heart failure, gallbladder disease, arthritis, and breathing problems, as well as breast, colon, and other cancers.

If you are overweight, you are more likely to develop heart disease even if you have no other risk factors. Being overweight also appears to contribute to heart disease by increasing the chances of developing other major risk factors, such as diabetes, high blood pressure, and high blood cholesterol. The bottom line: Maintaining a healthy weight is an extremely important part of heart disease prevention. It can help to protect your health—and even save your life.

## ***Should You Choose To Lose?***

Do you need to lose weight to reduce your risk of heart disease? You can find out by taking three simple steps. First, take a look at the box on page 35. You'll notice that your weight in relation to your height gives you a number called a "body mass index" (BMI). A BMI from 18.5 to 24.9 indicates a normal weight. A person with a BMI from 25 to 29.9 is overweight, while someone with a BMI of 30 or higher is obese. Those in the "overweight" or "obese" categories have a higher risk of heart disease.

# ARE YOU AT A *healthy* WEIGHT?

## Body Mass Index

Here is a chart for men and women that gives the BMI for various heights and weights.\*

BODY MASS INDEX											
HEIGHT	21	22	23	24	25	26	27	28	29	30	31
	4'10"	100	105	110	115	119	124	129	134	138	143
	5'0"	107	112	118	123	128	133	138	143	148	153
	5'1"	111	116	122	127	132	137	143	148	153	158
	5'3"	118	124	130	135	141	146	152	158	163	169
	5'5"	126	132	138	144	150	156	162	168	174	180
	5'7"	134	140	146	153	159	166	172	178	185	191
	5'9"	142	149	155	162	169	176	182	189	196	203
	6'0"	150	157	165	172	179	186	193	200	208	215
	6'1"	159	166	174	182	189	197	204	212	219	227
	6'3"	168	176	184	192	200	208	216	224	232	240

\* Weight is measured with underwear but no shoes.

## What Does Your BMI Mean?

### Categories:

**Normal weight: BMI = 18.5–24.9.** Good for you! Try not to gain weight.

**Overweight: BMI = 25–29.9.** Do not gain any weight, especially if your waist measurement is high. You need to lose weight if you have two or more risk factors for heart disease and are overweight, or have a high waist measurement.

**Obese: BMI = 30 or greater.** You need to lose weight. Lose weight slowly—about 1/2 to 2 pounds a week. See your doctor or a nutritionist if you need help.

Source: *Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults, The Evidence Report, National Heart, Lung, and Blood Institute, in cooperation with the National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, NIH Publication 98-4083, June 1998.*

The second step is to take your waist measurement. For women, a waist measurement of over 35 inches increases the risk of heart disease as well as the risks of high blood pressure, diabetes, and other serious health conditions. To measure your waist correctly, stand and place a tape measure around your middle, just above your hipbones. Measure your waist just after you breathe out.

The final step in determining your need to lose weight is to find out your other risk factors for heart disease. It is important to know whether you have any of the following: high blood pressure, high LDL cholesterol, low HDL cholesterol, high triglycerides, high blood glucose (blood sugar), a family history of early heart disease, physical inactivity, or cigarette smoking. Being age 55 or older, or having gone through menopause, also are heart disease risk factors. If you have a condition known as metabolic syndrome (see page 30), your risk of heart disease is particularly high. If you aren't sure whether you have some of these risk factors, consult with your doctor.

Once you have taken these three steps—found out your BMI, your waist measurement, and your other heart disease risk factors—you can use the information to decide if you need to take off pounds. While you should talk with your doctor about whether you should lose weight, keep these guidelines in mind:

- If you are overweight AND have two or more other risk factors, or if you are obese, you should lose weight.
- If you are overweight, have a waist measurement of over 35 inches, AND have two or more other risk factors, you should lose weight.
- If you are overweight, but do not have a high waist measurement, and have fewer than two other risk factors, you should avoid further weight gain.

### ***Small Changes Make a Big Difference***

If you need to lose weight, here is some good news: A small weight loss—just 5 to 10 percent of your current weight—will help to lower your risks of heart disease and other serious medical disorders. The best way to take off pounds is to do so gradually, by getting more physical activity and eating a balanced diet that is lower in calories and fat. (High-fat foods contain more calories than the same amount of other foods, so they can make it hard for you to avoid excess calories. But be careful—“lowfat” doesn’t always mean low in calories. Sometimes extra sugars are added to lowfat desserts, for example.) For some women at very high risk, medication also may be necessary. To develop a weight-loss or weight-maintenance program that works best for you, consult with your doctor, registered dietitian, or qualified nutritionist. For ideas on how to lose weight safely *and* keep it off, see “Aim for a Healthy Weight” on page 73.

### ***Physical Inactivity***

Physical inactivity raises your risk of heart disease—more than you might think. It boosts your chances of developing heart-related problems even if you have no other risk factors. It also increases the likelihood that you will develop other heart disease risk factors, such as high blood pressure, diabetes, and overweight.

Yet most women aren’t getting enough physical activity. According to the Surgeon General’s Report on Physical Activity and Health, 60 percent of women in the United States don’t get the recommended amount of physical activity. More than 25 percent of women are not active at all during their free time. Physical inactivity is especially common among African American and Hispanic women. Besides raising the risk of heart disease, lack of physical activity leads to more doctor visits, hospitalizations, and use of medicines for a variety of illnesses.



ANN

AGE: 58

"I wasn't aware of my risk factors, such as being diabetic and having a family history of heart problems."

For women, physical inactivity also increases the risk of osteoporosis, which in turn may increase the risk of broken bones. This is worrisome, since women tend to become less physically active as they get older.

Fortunately, research shows that as little as 30 minutes of moderate activity on most, and preferably all, days of the week helps to protect heart health. This level of activity can reduce your risk of heart disease as well as lower your chances of having a stroke, colon cancer, high blood pressure, diabetes, and other medical problems.

Examples of moderate activity are taking a brisk walk, raking leaves, housecleaning, or gardening. If you prefer, you can divide your 30-minute activity into shorter periods of at least 10 minutes each. To find out about easy, enjoyable ways to boost your activity level, see "Learn New Moves" on page 84.

## **Diabetes**

Diabetes is a major risk factor for heart disease and stroke. About 65 percent of people who have diabetes die of some type of cardiovascular disease. Diabetic women are at especially high risk for dying of heart disease and stroke. Today, 6 million women in the United States have diabetes, including an estimated 2.8 million women who do not even know they have the disease.

The type of diabetes that most commonly develops in adulthood is type 2 diabetes. In type 2 diabetes, the pancreas makes insulin but the body cannot use it properly and gradually loses the ability to produce it. Type 2 diabetes is a serious disease. In addition to increasing the risk for heart disease, it is the #1 cause of kidney failure, blindness, and lower limb amputation in adults. Diabetes can also lead to nerve damage and difficulties in fighting infection.

The risk of type 2 diabetes rises after the age of 45. You are much more likely to develop this disease if you are overweight, especially if you have extra weight around your middle. Other risk factors include physical inactivity and a family history of diabetes. Type 2 diabetes also is more common among American Indians, Hispanic Americans, African Americans, Asian Americans, and Pacific Islanders. Women who have had diabetes during pregnancy (gestational diabetes) or gave birth to a baby weighing more than 9 pounds are at increased risk for type 2 diabetes later in life.


Symptoms of diabetes may include fatigue, nausea, frequent urination, unusual thirst, weight loss, blurred vision, frequent infections, and slow healing of sores. But type 2 diabetes develops gradually and sometimes has no symptoms. Even if you have no symptoms of diabetes, if you are overweight and have any of the risk factors for type 2 diabetes, ask your health care provider about getting tested for it.

If you have diabetes, controlling your blood glucose levels will help prevent complications. Because diabetes is so strongly linked with heart disease, managing diabetes must include keeping certain factors under control (see “The ABCs of Diabetes Control” on page 41). Recommended levels of blood pressure and blood cholesterol control are lower for people with diabetes than for the general

population. Not smoking, being physically active, and taking aspirin daily (if your doctor recommends it) also are important to prevent heart disease if you have diabetes.

Some people do not yet have diabetes, but are at high risk for developing the disease. They have a condition known as “pre-diabetes,” in which blood glucose levels are higher than normal but not yet in the diabetic range. But new research shows that many people with pre-diabetes can prevent or delay the development of diabetes by making modest changes in diet and level of physical activity (see “Preventing Diabetes” on page 42).

People who are pre-diabetic also have a 50 percent greater chance of having a heart attack or stroke than those with normal blood glucose levels. So they should pay close attention to preventing or controlling blood pressure, blood cholesterol, and other risk factors for heart disease.



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“I’ve tried to pay attention to the little things I can do to make changes, like walking more and eating better. It’s possible to make changes. It’s hard, but it’s possible.”

— Stephanie Goldner, age 38

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## THE ABCs OF DIABETES *control*

If you have diabetes, three key steps can help you lower your risk of heart attack and stroke. Follow these “ABCs”:

**A** is for **A1C test**, which is short for hemoglobin A1C. This test measures your average blood glucose (blood sugar) over the last 3 months. It lets you know if your blood glucose level is under control. Get this test at least twice a year. Number to aim for: Below 7.

**B** is for **blood pressure**. The higher your blood pressure, the harder your heart has to work. Get your blood pressure measured at every doctor’s visit. Numbers to aim for: Below 130/80 mmHg.

**C** is for **cholesterol**. “Bad” cholesterol, or LDL, builds up and clogs your arteries. Get your LDL cholesterol tested at least once a year. Number to aim for: Below 100 mg/dL.

### **Be sure to ask your health care provider:**

- What are my ABC numbers?
- What should my ABC target numbers be?
- What actions should I take to reach my ABC target numbers?

### **To lower your risk of heart attack and stroke, also take these steps:**

- Get physical activity every day.
- Eat less salt, cholesterol, and fat, especially saturated fat.
- Eat more fiber. Choose whole grains, fruits, vegetables, and beans.
- Stay at a healthy weight.
- If you smoke, stop.
- Take medicines as prescribed.
- Ask your doctor about taking aspirin.
- Ask others to help you manage your diabetes.

## *preventing* **DIABETES**

If you have “pre-diabetes”—higher than normal glucose levels—you are more likely to develop type 2 diabetes. *But you can take steps to improve your health, and delay or possibly prevent diabetes.* A recent study found that many overweight, pre-diabetic people dramatically reduced the risk of developing diabetes by following a lower-fat, lower-calorie diet and getting 30 minutes of physical activity at least 5 days per week. Some encouraging results of the study:

- Overall, people who achieved a 5 to 7 percent weight loss (about 10 to 15 pounds) through diet and increased physical activity (usually brisk walking) reduced their risk of diabetes by 58 percent over the next 3 years.
- For people over age 60, these lifestyle changes reduced the risk of developing diabetes by 71 percent.
- Benefits were seen in all of the racial and ethnic groups that participated in the study—White, African American, Hispanic, American Indian, Asian American, and Pacific Islanders.
- People taking the diabetes drug metformin (Glucophage) reduced their risk of developing the disease by 31 percent.

These findings suggest that you can act to prevent or delay diabetes, even if you are at high risk for the disease. For more information on how to choose and cook lowfat foods, get more physical activity, and achieve a healthy weight, see “Taking Control,” starting on page 55.

## OTHER FACTORS THAT *affect* HEART DISEASE

### Menopausal Hormone Therapy: What Every Woman Needs To Know

*M*enopausal hormone therapy once seemed the answer for many of the conditions women face as they age. It was thought that hormone therapy could ward off heart disease, osteoporosis, and cancer, while improving women's quality of life.

But beginning in July 2002, findings emerged from clinical trials that showed this was not so. In fact, long-term use of hormone therapy poses serious risks and may increase the risk of heart attack and stroke.

The findings come from the Women's Health Initiative (WHI), launched in 1991 to test ways to prevent a number of medical disorders in postmenopausal women. It consists of a set of clinical studies on hormone therapy, diet modification, and calcium and vitamin D supplements; an observational study; and a community prevention study.

The two hormone therapy clinical studies were both stopped early because of serious risks and the failure to prevent heart disease. One of the hormone studies involved 16,608 postmenopausal women with a uterus who took either estrogen-plus-progestin therapy or a placebo. (The added progestin protects women against uterine cancer.) The other study involved 10,739 women who had had a hysterectomy and took estrogen alone or a placebo. (A placebo is a substance that looks like the real drug but has no biologic effect.) The estrogen used in the WHI was conjugated equine estrogens (0.625 mg daily), and the progestin was medroxyprogesterone acetate (2.5 mg daily).

Results from the hormone therapy studies are given on pages 46 and 47. Briefly, the estrogen-plus-progestin therapy increased women's risk for heart attacks, stroke, blood clots, and breast cancer. It also doubled the risk of dementia and did not protect women against memory loss. However, the therapy had some benefits: It reduced the risk for colorectal cancer and fractures.

Estrogen-alone therapy increased the risk for stroke and venous thrombosis (blood clot, usually in one of the deep veins of the legs). It had no effect on heart disease and colorectal cancer, and an uncertain effect on breast cancer. Estrogen alone gave no protection against memory loss, and there were more cases of dementia in those who took the therapy than those on the placebo, although the increase was not statistically significant. Estrogen alone reduced the risk for fractures.

Further, WHI found that estrogen plus progestin did not improve women's overall quality of life. However, the therapy did relieve menopausal symptoms such as hot flashes and night sweats in women who suffered them.

The women in the studies are now in a followup phase, expected to last until 2007. The other WHI studies are still underway.

If you are currently on or have taken menopausal hormone therapy, the findings can't help but concern you. It is important to know, however, that those results apply to a large group of women. An individual woman's increased risk for disease is quite small. For example, each woman in the estrogen-plus-progestin study had an increased risk of breast cancer of less than one-tenth of 1 percent per year.

While questions remain, the findings make possible some advice about using hormone therapy:

- Estrogen alone or with progestin should not be used to prevent heart disease. Talk with your doctor about other ways of preventing heart attack and stroke, including lifestyle changes and medicines such as cholesterol-lowering statins and blood pressure drugs.
- If you are considering using menopausal hormone therapy to prevent osteoporosis, talk with your doctor about the possible benefits weighed against your personal risks for heart attack, stroke, blood clots, and breast cancer. Ask your doctor about alternative treatments that are safe and effective in preventing osteoporosis and bone fractures.
- Do not take menopausal hormone therapy to prevent dementia or memory loss.
- If you are considering menopausal hormone therapy to provide relief from menopausal symptoms such as hot flashes, talk with your doctor about whether this treatment is right for you. The WHI did not test the short-term risks and benefits of using hormone therapy for menopausal symptoms. The current U.S. Food and Drug Administration recommendation for menopausal hormone therapy is that it should be used at the lowest dose for the shortest period of time to reach treatment goals.

And remember: Your risk for heart disease, stroke, osteoporosis, and other conditions may change as you age. So review your health regularly with your doctor. New treatments that are safe and effective may become available. Stay informed.

If you have heart disease, see page 100 for more on menopausal hormone therapy.

## MENOPAUSAL HORMONE THERAPY: RISKS *and* BENEFITS

The WHI had two studies of menopausal hormone therapy—estrogen alone and estrogen plus progestin. Findings for the two studies should not be compared directly. Women in the studies had different traits. Women in the estrogen-alone study were followed for almost 7 years; women in the estrogen-plus-progestin study were followed for about 5 years.

Findings show the average results **for every 10,000 women per year** of hormone therapy use compared with a placebo:

### ESTROGEN ALONE

#### Increased risks

Stroke	_____	12 more strokes
Venous thrombosis (blood clot, usually in a deep vein of legs)	_____	6 more cases. (An increased risk of pulmonary embolism—blood clots in the lung—was not statistically significant.)

#### No difference in risk (neither increased nor decreased) or of uncertain effect

Coronary heart disease	_____	No significant difference. During the first 2 years of use, the risk was slightly increased for estrogen alone, but it appeared to diminish over time.
Colorectal/total cancer	_____	No significant difference for either colorectal or total cancer.
Deaths (all or specific cause)	_____	No significant difference

Breast cancer	Uncertain effect. Though there were fewer cases in the estrogen-alone group, this finding was not statistically significant.
Dementia	Though there were more cases in the estrogen-alone group, this finding was not statistically significant.

### Increased benefit

Bone fractures	6 fewer hip fractures.
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## ESTROGEN PLUS PROGESTIN

### Increased risk for


Breast cancer	8 more cases
Stroke	8 more cases
Heart attack	7 more cases
Blood clots (legs, lungs)	18 more cases

### Increased benefits

Colorectal Cancer	6 fewer cases
Fractures	5 fewer hip fractures

### No difference

Deaths



"I LEARNED THAT MY HIGH CHOLESTEROL PUTS  
ME AT RISK FOR HEART DISEASE, SO I'VE STARTED  
MAKING CHANGES. I'M MAKING AN EFFORT TO  
AVOID FATTY FOODS, AND I AM ALSO EATING  
LESS RED MEAT AND MORE FISH. I KNOW THAT MY  
DAILY WALKS ARE IMPORTANT. I AM MORE  
CONSCIOUS ABOUT MY HEALTH, AND  
I'M REALLY TRYING TO TAKE CARE OF  
MYSELF. MY HUSBAND FOUND OUT  
THAT HE HAS HIGH CHOLESTEROL  
TOO, SO WE'RE BOTH TRYING TO  
MAKE CHANGES IN OUR LIVES.  
IT HELPS HAVING EACH  
OTHER THERE FOR  
SUPPORT."

— Julie Rodriguez, age 61

## Stress and Depression

Many women are concerned about a possible connection between stress and heart disease. Many studies do report a connection for both women and men. For example, the most commonly reported “trigger” for a heart attack is an emotionally upsetting event, particularly one involving anger. After a heart attack, people with higher levels of stress and anxiety tend to have more trouble recovering. Also, some common ways of coping with stress, such as overeating, heavy drinking, and smoking, are clearly bad for your heart.

But stress is not the only emotional influence on heart health. Depression, too, is common in both women and men after a heart attack. If you have had a heart attack and find yourself feeling depressed or “blue” for a long time afterward, or if the sad feelings are severe, talk with your doctor about ways to get help. Also keep in mind that support from family, friends, and other heart patients can help to improve mood and adjustment to the recovery process.

The good news is that sensible health habits can have a protective effect. Regular physical activity not only relieves stress and depression, but also can directly lower your risk of heart disease. Research also shows that participating in a stress management program following a heart attack lessens the chances of further heart-related problems. Stress management programs, as well as support groups for heart patients, can also help you develop new ways of handling everyday life challenges.

Good relationships count, too. Developing strong personal ties reduces the chances of developing heart disease. Supportive relationships also help to prolong people's lives after a heart attack. Religious or spiritual beliefs and activity are also linked to longer survival among heart surgery patients.

Much remains to be learned about the connections among stress, depression, and heart disease, but a few things are clear: Staying physically active, developing a diverse circle of supportive people in your life, and sharing your feelings and concerns with them can help you to be happier and live longer.

## **Alcohol**

Over the last several years, a number of studies have reported that moderate drinkers are less likely to develop heart disease than people who don't drink any alcohol or who drink too much. Small amounts of alcohol may help protect against heart disease by raising levels of "good" HDL cholesterol.

If you are a nondrinker, this is not a recommendation to start using alcohol. Recent studies show that alcohol use increases the risk of breast cancer. And certainly if you are pregnant, planning to become pregnant, or have another health condition that could make alcohol use harmful, you should not drink. But, otherwise, if you're already a moderate drinker, you may be less likely to have a heart attack.

It is important, though, to weigh benefits against risks. Talk with your doctor about your personal risks of breast cancer, heart disease, and other health conditions that may be affected by drinking alcohol. With the help of your physician, decide whether moderate drinking to lower heart attack risk outweighs the possible increased risk of breast cancer or other medical problems.

If you do decide to use alcohol, remember that moderation is the key. Heavy drinking causes many heart-related problems. More than three drinks per day can raise blood pressure, while binge drinking can contribute to stroke. Too much alcohol also can damage the heart muscle, leading to heart failure. Overall, people who drink heavily on a regular basis have higher rates of heart disease than either moderate drinkers or nondrinkers.

## WHAT IS *moderate* DRINKING?

For women, moderate drinking is defined as no more than one drink per day, according to the *U.S. Dietary Guidelines for Americans*. Count as one drink:

- 12 ounces of beer (150 calories)
- 5 ounces of wine (100 calories)
- 1½ ounces of 80-proof hard liquor (100 calories)

## Birth Control Pills

Studies show that women who use high-dose birth control pills (oral contraceptives) are more likely to have a heart attack or stroke because blood clots are more likely to form in the blood vessels. These risks are lessened once the birth control pill is stopped. Using the pill also may worsen the effects of other risk factors, such as smoking, high blood pressure, diabetes, high blood cholesterol, and overweight.

Much of this information comes from studies of birth control pills containing higher doses of hormones than those commonly used today. Still, the risks of using low-dose pills are not fully known. Therefore, if you are now taking any kind of birth control pill or are considering using one, keep these guidelines in mind:

**Don't mix smoking and the "pill."** If you smoke cigarettes, stop smoking or choose a different form of birth control. Cigarette smoking boosts the risk of serious health problems from birth control pill use, especially the risk of blood clots. For women over 35, the risk is particularly high. Women who use oral contraceptives should not smoke.

**Pay attention to diabetes.** Levels of glucose, or blood sugar, sometimes change dramatically in women who take birth control pills. Any woman who is diabetic, or has a close relative who is, should have regular blood sugar tests if she takes birth control pills.

**Watch your blood pressure.** After starting to take birth control pills, your blood pressure may go up. For most women, this increase does not go above normal. But if your blood pressure increases to 140/90 mmHg or higher, ask your doctor about changing pills or switching to another form of birth control. Be sure to get your blood pressure checked at least once a year.

**Talk with your doctor.** If you have heart disease, a heart defect, or if you have suffered a stroke, birth control pills may not be a safe choice. Be sure your doctor knows about these or other serious health conditions before prescribing birth control pills for you.

### **Sleep Apnea**

Sleep apnea is a serious disorder in which a person briefly and repeatedly stops breathing during sleep. People with untreated sleep apnea are more likely to develop high blood pressure, heart attack, congestive heart failure, and stroke.

Women are more likely to develop sleep apnea after menopause. Other factors that increase risk are overweight, smoking, use of alcohol or sleeping pills, and a family history of sleep apnea. Symptoms include heavy snoring and gasping or choking during sleep, along with extreme daytime sleepiness.

If you think you may have sleep apnea, ask your doctor for a test called polysomnography, which is usually performed overnight in a sleep center. If you are overweight, even a small weight loss—10 percent of your current weight—can relieve mild cases of sleep apnea. Other self-help treatments include quitting smoking and avoiding alcohol and sleeping pills. Sleeping on your side, rather than on your back, also may help. Some people benefit from a mechanical device that increases air pressure through the nasal passages. For very serious cases, surgery may be needed.

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**If you smoke cigarettes, stop smoking or choose a different form of birth control.**

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## NEW RISK *factors?*

We know that high blood cholesterol boosts heart disease risk. Yet many people who have heart attacks have normal cholesterol levels. To find out why, researchers are studying other factors that might contribute to heart disease, including inflammation of the artery walls. Inflammation can lead to the formation of plaque that is especially likely to rupture. When plaque bursts, blood clots can result.

Several “emerging risk factors” appear to be involved in this process, though we don’t know for sure yet whether they lead to heart disease, or whether treating them will reduce risk. Ask your doctor whether you should be tested for any of these emerging risk factors:

**Homocysteine.** High blood levels of this amino acid may irritate and damage the arteries, making the blood more likely to clot, and/or make blood vessels less flexible. For women, homocysteine levels tend to rise after menopause. It may be possible to lower elevated levels of homocysteine by getting plenty of folic acid, B6, and B12 in your diet.

**Chlamydia pneumoniae.** A common cause of respiratory infections, chlamydia pneumoniae also may inflame and damage blood vessel walls. Antibiotics may reduce inflammation.

**Lp(a) protein.** This is a lipoprotein that may cause too much blood clotting. It also may worsen inflammation. Niacin, a lipid-lowering drug, may help to lower Lp(a) protein levels.

**C-reactive protein (CRP).** High levels of C-reactive protein indicate inflammation in artery walls. A simple blood test can measure the levels of CRP in the blood. Aspirin and statin drugs may help to reduce high CRP levels.

## TAKING *control*

*N*ow that you know the risks for heart disease, what can you do to protect yourself? The good news: Plenty. Research shows that women can lower their heart disease risk enormously—by 82 percent—simply by leading a healthy lifestyle. This section will offer dozens of down-to-earth ideas for making heart healthy practices part of your daily life.

If you already have heart disease, this section also will tell you about the kinds of tests, treatments, and medications that can help you stay healthier. You will also find out about the warning signs of a heart attack and how to get fast, life-saving help.

For all women, adopting a healthy lifestyle is extremely important. Remember, heart disease is a woman's greatest health threat. Making healthy changes in your daily habits can add years to your life—vital, active years. You will gain more energy and stamina to enjoy the people and activities you love.

Sometimes, women are so good at taking care of others that they don't take the time to keep themselves healthy and strong. Make time to take care of yourself. And once you get started, keep it up. Ask your family and friends to support you in maintaining your new, heart healthy lifestyle. You're worth it!

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**Research shows that women can lower their heart disease risk enormously—by 82 percent—simply by leading a healthy lifestyle.**

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## A FAMILY PLAN FOR HEART *health*

As you make healthy changes in your own daily habits, why not get the whole family involved? By teaching your children or grandchildren the importance of eating well and getting regular physical activity, you will help them develop good habits for a lifetime. Here are some ways to get started:

**Set a good example.** Adults have a big influence on children's and teens' behavior—even though kids may not want to admit it! If you follow a healthy lifestyle, your children and grandchildren will be more likely to do the same. Let them see you eating nutritious snacks and enjoying outdoor activities. Invite them to join you.

**Raise “kitchen kids.”** Show young children how to clean fruits and veggies and combine them into salads. When they are old enough, teach them to use the cooktop, oven, microwave, and toaster safely. Show teens how to make simple, healthy dishes, such as pasta with vegetables and broiled chicken or fish. Children who have basic cooking skills appreciate food more and are more likely to try new dishes.

**Get them moving.** Encourage your kids or grandkids to get some exercise throughout the day and especially on weekends. Go on outings with them that involve activities such as hiking, swimming, or bicycling. Walk, bike, or jog with them to places close by. Use your backyard or local park for basketball, baseball, football, badminton, or volleyball.



PATTIE

AGE: 46

“There are a lot of things I want to do in my life, so I know it’s important to take care of my health. Most women put everyone else before themselves, but you can’t put off taking care of your heart.”

## AN ACTION PLAN FOR *heart* HEALTH

Here’s *the heart truth*: If you eat a nutritious diet, get regular physical activity, maintain a healthy weight, and stop smoking, you will improve your heart health. No matter what heart disease risk factors you have—or how many—you will greatly benefit from taking action in these four areas. If you already have heart disease, you can lessen its severity by following this plan.

True, you may need to take other steps to prevent or control heart disease. For example, if you have diabetes, you also will need to keep your blood sugar levels under control. But eating a good diet, controlling your weight, and getting more physical activity will help you keep your blood sugar at healthy levels. These steps will also help reduce your chances of developing high blood pressure or high blood cholesterol. Whatever your current health conditions or habits, this action plan can make an enormously positive difference in your heart health. To find out how to get started, read on.

## Eat for Health

The health of your heart has a lot to do with the foods you eat.

One good eating plan is the *Dietary Guidelines for Americans*, which also includes advice for overall health and food safety:

- Choose a variety of grains daily, especially whole grains.
- Choose a variety of fruits and vegetables daily.
- Choose a diet low in saturated fat, *trans* fat, and cholesterol, and moderate in total fat.
- Choose beverages and foods to moderate your intake of sugars.
- Choose and prepare foods with less salt.
- If you drink alcoholic beverages, do so in moderation.
- Aim for a healthy weight.
- Be physically active each day.
- Keep food safe to eat.
- Let the Food Guide Pyramid guide your food choices.

Weight and physical activity are discussed in later sections.

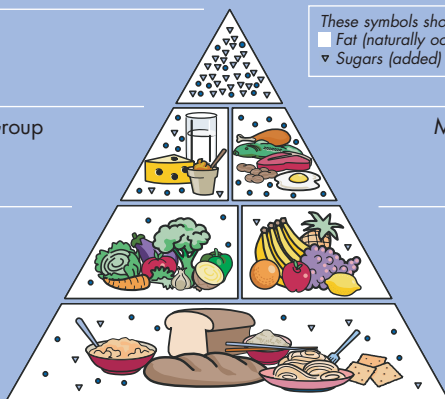
The Food Guide Pyramid is shown in the box below. Use it to choose a wide variety of healthy foods and to plan daily servings.

### FOOD GUIDE PYRAMID

Fats, Oils, & Sweets  
USE SPARINGLY

Milk, Yogurt, & Cheese Group  
2-3 SERVINGS

Vegetable Group  
3-5 SERVINGS



These symbols show fat and added sugars in food:  
■ Fat (naturally occurring and added)  
▼ Sugars (added)

Meat, Poultry, Fish, Dry Beans,  
Eggs, & Nuts Group  
2-3 SERVINGS

Fruit Group  
2-4 SERVINGS

Bread, Cereal, Rice,  
& Pasta Group  
6-11 SERVINGS

Source: U.S. Department of Agriculture/U.S. Department of Health and Human Services

# HOW TO READ A NUTRITIONAL FACTS LABEL

Macaroni & Cheese

Start Here

Check Calories

Limit these Nutrients

Get Enough of these Nutrients

Footnote

Nutrition Facts			
Serving Size 1 cup (228g)			
Servings Per Container 2			
Amount Per Serving			
Calories 250		Calories from Fat 110	
		% Daily Value*	
Total Fat 12g		18%	
Saturated Fat 3g		15%	
Trans Fat 3g			
Cholesterol 30mg		10%	
Sodium 470mg		20%	
Total Carbohydrate 31g		10%	
Dietary Fiber 0g		0%	
Sugars 5g			
Protein 5g			
Vitamin A		4%	
Vitamin C		2%	
Calcium		20%	
Iron		4%	
* Percent Daily Values are based on a 2,000 calorie diet Your Daily values may be higher or lower depending on your calorie needs.			
		Calories:	2,000 2,500
Total Fat	Less Than	65g	80g
Sat Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Quick Guide to % Daily Value

- 5% or less is Low
- 20% or more is High

While the *Dietary Guidelines* offer an excellent “basic menu” for heart health, you may need to make some additional changes in your diet if you have high blood pressure or high blood cholesterol. You may want to work with a registered dietitian to help you make these changes. A dietitian can teach you about the eating plan that is best for you, determine a reasonable calorie level, and help you choose foods and plan menus. A dietitian can also help you keep track of your progress and encourage you to stay on the diet. Talk with your doctor about whether you should get a referral to a registered dietitian. In the meantime, if you have high blood pressure or high blood cholesterol, here are some guidelines:

### **Blood Pressure and the DASH Eating Plan**

If you have high blood pressure or prehypertension, you may want to follow the DASH eating plan. As noted, DASH stands for “Dietary Approaches to Stop Hypertension,” and the eating plan emphasizes fruits, vegetables, whole-grain foods, and lowfat dairy products. It is rich in magnesium, potassium, calcium, protein, and fiber, but low in saturated fat, *trans* fat, and total fat and cholesterol. It limits red meat, sweets, and sugar-containing beverages.

A major study found that people who followed this eating plan reduced their blood pressure more than those who ate more “typical” American diets, which have fewer fruits and vegetables. A second study found that people who followed the DASH eating plan *and* cut down on sodium got the biggest reductions in blood pressure. (Salt, or sodium chloride, and other forms of sodium are found in many processed foods. Further, salt may be added in cooking and at the table.) So, for a truly winning combination, follow the DASH eating plan *and* lower your sodium intake as much as possible. The study found that the less sodium people consumed, the more their blood pressure dropped. (See “The DASH Eating Plan” on page 61 and “Hold the Salt” on page 62.)

While the DASH eating plan is geared especially to people with high blood pressure or prehypertension, it can be used by anyone. So share it with your family. When people with normal blood pressure follow the DASH eating plan, especially when they also consume less sodium, they lessen their chances of developing high blood pressure.

# THE DASH EATING PLAN

The DASH eating plan shown below is based on 2,000 calories a day. The number of daily servings in a food group may vary from those listed, depending on how many daily calories you need.

Food Group	Daily Servings (except as noted)	Serving Sizes
Grains and grain products	7-8	1 slice bread 1 cup ready-to-eat cereal* ½ cup cooked rice, pasta, or cereal
Vegetables	4-5	1 cup raw leafy vegetables ½ cup cooked vegetables 6 ounces vegetable juice
Fruits	4-5	1 medium-sized fruit ¼ cup dried fruit ½ cup fresh, frozen, or canned fruit 6 ounces fruit juice
Lowfat or fat-free dairy foods	2-3	8 ounces milk 1 cup yogurt 1½ ounces cheese
Lean meats, poultry, and fish	2 or less	3 ounces cooked lean meat, skinless poultry, or fish
Nuts, seeds, and dry beans	4-5 per week	⅓ cup or 1½ ounces nuts 1 tablespoon or ½ ounce seeds ½ cup cooked dry beans
Fats and oils**	2-3	1 teaspoon soft margarine 1 tablespoon lowfat mayonnaise 2 tablespoons light salad dressing 1 teaspoon vegetable oil
Sweets	5 per week	1 tablespoon sugar 1 tablespoon jelly or jam ½ ounce jelly beans 8 ounces lemonade

\* Serving sizes vary between ½-1¼ cups. Check the product's nutrition label.  
\*\* Fat content changes serving counts for fats and oils. For example, 1 tablespoon of regular salad dressing equals 1 serving; 1 tablespoon of a lowfat dressing equals ½ serving; 1 tablespoon of a fat-free dressing equals 0 servings.

## **HOLD THE SALT: HOW TO** *reduce* **SALT AND SODIUM IN YOUR DIET**

You can help prevent and control high blood pressure by cutting down on salt and other forms of sodium. Try to consume no more than 2,400 milligrams (mg) of sodium a day—or, if you can, no more than 1,500 mg a day. (2,400 mg of sodium equals 1 teaspoon of table salt, while 1,500 mg equals  $\frac{2}{3}$  teaspoon.) Here are some tips on limiting your intake of salt and sodium:

- Use reduced-sodium or no-salt-added products, such as no-salt-added canned vegetables or ready-to-eat cereals that have no added salt.
- When you cook, be “spicy” instead of “salty.” Flavor foods with herbs, spices, wine, lemon, lime, or vinegar. Be creative!
- Don’t bring the salt shaker to the table. Try an herb substitute instead.
- Use fresh poultry, fish, and lean meat, rather than canned, smoked, or processed types.
- Cut down on cured foods (such as bacon and ham), foods packed in brine (such as pickles and olives), and condiments (such as mustard, catsup, barbeque sauce, and MSG). Limit even lower-sodium versions of soy sauce and teriyaki sauce.
- Read the label and choose convenience foods that are lower in sodium. These foods include frozen dinners, pizza, packaged mixes, canned soups and broths, and salad dressings.
- Rinse canned foods, such as tuna, to remove some of the sodium.
- While salt substitutes containing potassium chloride may be useful for some individuals, they can be harmful to people with certain medical conditions. Ask your doctor before trying salt substitutes.

### ***What Else Affects Blood Pressure?***

A number of nutrients, foods, and other factors have been reported to affect blood pressure. Here are the latest research findings:

- **Potassium.** Potassium helps to prevent and control high blood pressure. Many fruits and vegetables, some dairy foods, and fish are rich sources of potassium.
- **Calcium and Magnesium.** These nutrients may help to prevent high blood pressure and improve health in other ways. Dairy products are a rich source of calcium, while magnesium is found in many whole-grain products and dark-green leafy vegetables.
- **Garlic and Onions.** These foods have not been found to affect blood pressure. But they are tasty, nutritious substitutes for salty seasonings and can be used often.
- **Caffeine.** This may cause blood pressure to rise, but only temporarily. Unless you are sensitive to caffeine, you do not have to limit how much you consume in order to prevent or control high blood pressure.
- **Stress.** Stress, too, can make blood pressure go up for a while, and has been thought to contribute to high blood pressure. But the long-term effects of stress are not clear. Furthermore, stress management techniques do not seem to prevent high blood pressure. However, stress management approaches may help you control overeating.

## ***High Blood Cholesterol and the TLC Program***

TLC stands for a treatment program called “Therapeutic Lifestyle Changes.” This program includes a low-saturated fat, low-cholesterol diet that helps to reduce LDL cholesterol, increase physical activity, and control weight. Adopt the TLC approach, and you will lower your chances of developing heart disease, future heart attacks, and other heart disease complications.

### *eating* **THE TLC WAY**

If your LDL cholesterol is above your goal level (see page 28), you should start on the TLC eating plan right away. The TLC diet will help to reduce your LDL cholesterol and lower your chances of developing heart disease. If you already have heart disease, it will lessen your chances of a heart attack and other heart-related problems. On the TLC diet, you should eat:

- Less than 7 percent of the day’s total calories from saturated fat. Lowering saturated fat is the most important dietary change for reducing blood cholesterol.
- Less than 200 milligrams of dietary cholesterol a day.
- Just enough calories to achieve or maintain a healthy weight.

If your blood cholesterol is not lowered enough on the TLC diet, your doctor or registered dietitian may advise you to increase the amount of soluble fiber and/or add cholesterol-lowering food products. These products include margarines that contain ingredients called “plant sterols” or “plant stanol esters,” which lower LDL cholesterol. If your LDL level is still not lowered enough, your doctor may prescribe a cholesterol-lowering drug along with the TLC diet. For more, see NHLBI’s Web page, “Live Healthier, Live Longer” (see “To Learn More” on the inside back cover).

## ***Now You're Cooking: Limiting Saturated Fat and Cholesterol***

Planning and preparing nutritious meals may take a little extra effort, but the health benefits are huge. Here are some tips for cutting down on saturated fat and dietary cholesterol, which will help to lower your LDL cholesterol and reduce your heart disease risk. It will improve heart health for all women, and may be particularly useful to those following the TLC diet.

### **Meat, Poultry, and Fish**

- Choose fish, poultry, and lean cuts of meat. Trim the fat from meats; remove the skin and fat from chicken. Keep portion sizes moderate.
- Broil, bake, roast, or poach instead of frying. When you do fry, use a nonstick pan and a nonstick cooking spray, or a very small amount of oil or margarine.
- Cut down on sausage, bacon, and processed high-fat cold cuts.

### **Dairy Products and Eggs**

- Instead of whole milk or cream, use nonfat or 1 percent milk.
- Use nonfat or lowfat cheeses and yogurt.
- Replace ice cream with sorbet, sherbet, and nonfat or lowfat frozen yogurt. Keep portion sizes moderate.
- Limit the number of egg yolks you eat. Egg whites contain no fat or cholesterol, so you can eat them often. In most recipes, you can substitute two egg whites for one whole egg.
- Use soft margarines (liquid or tub types) that contain little or no *trans* fat. *Trans* fat is another type of dietary fat that raises LDL cholesterol.

## Sauces, Soups, and Casseroles

- After making sauces or soups, cool them in the refrigerator and skim the fat from the top. Do the same with canned soups.
- Thicken a lowfat sauce with cornstarch or flour.
- Make main dishes with whole-grain pasta, rice, or dry peas and beans. If you add meat, use small pieces for flavoring rather than as the main ingredient.

## When You Can't Face Cooking

- Check nutrition labels to choose frozen dinners and pizzas that are lowest in saturated fat and cholesterol. Make sure the dinners include vegetables, fruits, and grains—or add them on the side.
- Choose store-bought baked goods that are lowest in saturated fat, cholesterol, *trans* fats, and hydrogenated (hardened) fats. *Trans* fats, or *trans* fatty acids, are formed when vegetable oil is hardened to become margarine or shortening in a process called hydrogenation. Foods high in *trans* fats tend to raise blood cholesterol. Read labels. To reduce *trans* fats, limit products that list “hydrogenated oil” or “partially hydrogenated oil” as an ingredient. Also, remember that even “no cholesterol” and fat-free baked goods still may be high in calories.

## Dining Out for Health

With a little planning—and a willingness to speak up—you can eat healthfully when you dine out. Here are some tips:

**You're the customer.** Ask for what you want. Most restaurants will honor your requests. In any case, you have nothing to lose by asking!

**Order small.** To reduce portion sizes, try ordering appetizers as your main meal.

**Ask questions.** Don't hesitate to ask your server how foods are prepared and whether the restaurant will make substitutions. Ask if they will:

- Serve lowfat or nonfat milk rather than whole milk or cream.
- Tell you the type of cooking oil used. (Preferred types, which are lower in saturated fat: canola, safflower, sunflower, corn, and olive oils.)
- Trim visible fat off poultry or meat.
- Leave all butter, gravy, and sauces off an entrée or side dish.
- Serve salad dressing on the side.
- Meet special requests if you make them in advance.

**Select foods cooked by lowfat methods.** Look for terms such as broiled, baked, roasted, poached, or lightly sautéed.

**Limit foods high in calories, fat, and saturated fat.**

Watch out for terms such as fried, crispy, creamed, escalloped, hollandaise, béarnaise, casserole, and pastry crust.

### ***Make Healthy Choices For:***

- **Breakfast:** Fresh fruit, small glass of citrus juice, lowfat or nonfat milk and yogurt, whole-grain bread products and cereals, omelet made with egg whites or egg substitute.
- **Beverages:** Water with lemon, flavored sparkling water, juice spritzer (half fruit juice and half sparkling water), iced tea, reduced-sodium tomato juice.

- **Breads:** Most yeast breads are low in calories and fat—as long as you hold the butter, margarine, or olive oil.
- **Appetizers:** Steamed seafood, fresh fruit, bean soups, salad with reduced-fat dressing.
- **Entrees:** Skinless poultry, fish, shellfish, vegetable dishes, pasta with red sauce or vegetables. Limit use of butter, margarine, and salt at the table.
- **Salads:** Fresh lettuce, spinach, and other greens, other fresh vegetables, chickpeas, and kidney beans. Skip nonvegetable choices such as deli meats, bacon, egg, cheese, and croutons. Choose lower-calorie, reduced-fat or fat-free dressings, lemon juice, or vinegar.
- **Side Dishes:** Vegetables and starches (rice, potatoes, noodles). Ask for salsa or lowfat yogurt instead of sour cream or butter.
- **Dessert:** Fresh fruit, nonfat frozen yogurt, sherbet or fruit sorbet (usually fat free, but ask for the calorie content). Try sharing a dessert. If you drink coffee or tea with dessert, ask for lowfat or nonfat milk instead of cream or half-and-half.

**Know Your Foods.** Following are some additional tips on shopping, cooking, and eating for heart health:

- To choose foods wisely, see “How To Read a Nutritional Facts Label” on page 59 and “Label Language” on page 69.
- To make and eat heart healthy meals, see “Figuring Out Fat” on page 70 and “What’s in a Serving?” on page 72.
- For other tips on making good food choices, see “Healthy Snacking” on page 71 and “Vitamins for Heart Health” on page 74.

# LABEL LANGUAGE

Food labels can help you choose items that are lower in sodium, saturated and total fat, *trans* fat, cholesterol, and calories. When you grocery shop, look for these claims on cans, bottles, and other packaging:

Sodium claims	What they mean
Sodium free or salt free	Less than 5 mg of sodium per serving
Very low sodium	35 mg or less per serving
Low sodium	140 mg or less per serving
Low sodium meal	140 mg or less per 3½ oz
Reduced or less sodium	At least 25% less than the regular version
Light in sodium	50% less than the regular version
Unsalted or no salt added	No salt added during processing
Fat claims	What they mean
Fat free	Less than ½ gram of fat per serving
Low-saturated fat	1 gram or less per serving
Lowfat	3 grams or less per serving
Reduced fat	At least 25% less fat than the regular version
Light in fat	50% less than the regular version
Calorie claims	What they mean
Calorie free	Less than 5 calories per serving
Low calorie	40 calories or fewer than the regular version
Reduced or less calories	At least 25% fewer calories than the regular version
Light or lite	Half the fat or one-third of the calories of the regular version

FIGURING OUT FAT

Your personal “fat allowance” depends on how many calories you consume each day. If you do not have high blood cholesterol or heart disease, the saturated fat in your diet should be less than 10 percent of your daily calories, and total fat should be no more than 30 percent.

The chart below shows the maximum amount of saturated fat and total fat you should eat, depending on how many calories you take in each day. If you have high blood cholesterol or heart disease, the amount of saturated fat will be different. (See “Eating the TLC Way” on page 64.) Check food product labels to find out the number of fat grams—both saturated and total—in each serving.

IF YOU CONSUME	EAT	
	Saturated Fat (Based on 9% of calories)	Total Fat (Based on 30% of calories)
1,200	13 grams or less	40 grams
1,600	18 grams or less	53 grams
2,000*	22 grams or less	67 grams
2,200	24 grams or less	73 grams
2,500*	28 grams or less	83 grams
2,800	31 grams or less	93 grams

*\*Percent Daily Values on Nutrition Facts labels are based on a 2,000-calorie diet. Values for 2,000 and 2,500 calories are rounded to the nearest 5 grams to be consistent with the Nutrition Facts label.*

## Healthy Snacking

Many snacks, including many types of cookies, crackers, and chips, are high in saturated fat, *trans* fat, cholesterol, sodium, and calories. But that doesn't mean you have to cut out all between-meal treats. Keep the foods listed below on hand for snack attacks. But, keep in mind that while these snacks may be low in fat, many are not low in calories. So watch how much you eat, especially if you are trying to control your weight.

Here are some healthier, lowfat, between-meal snacks:

- 100 percent fruit juices.
- Nonfat or reduced fat milk.
- Nonfat frozen yogurt, sherbet, and sorbet.
- Lowfat cookies such as animal crackers, graham crackers, ginger snaps, and fig bars.
- Lowfat crackers such as melba toast, or rice, rye, and soda crackers. Look for unsalted or low-sodium types.
- Homemade cookies, cake, muffins, or pudding made with less saturated fat, *trans* fat, cholesterol, and salt.
- Hard candy, jelly beans, candy corn, and gumdrops.
- Fresh or dried fruit, or fruits canned in their own juice.
- Vegetable sticks. Try a dab of reduced-fat peanut butter in celery sticks.
- Air-popped popcorn with no salt or butter; fat-free, low-sodium pretzels.



## WHAT’S IN A SERVING?

The *Dietary Guidelines for Americans* offer a healthy overall eating plan. The Food Guide Pyramid on page 58 tells you how many servings you need of the various food groups. But what counts as a serving? Here’s a quick rundown:

Food Group/Daily Servings	What Counts as a Serving
Breads, cereals, rice, and pasta: 6-11 servings	1 slice bread 1 cup ready-to-eat cereal flakes $\frac{1}{2}$ cup cooked cereal, rice, pasta
Vegetables: 3-5 servings	1 cup raw leafy vegetables $\frac{1}{2}$ cup other vegetables $\frac{3}{4}$ cup of vegetable juice
Fruits: 2-4 servings	1 medium apple, banana, orange, pear $\frac{1}{2}$ cup fruit-chopped, cooked, canned $\frac{3}{4}$ cup fruit juice
Milk, yogurt, and cheese: 2-3 servings	1 cup milk (nonfat or lowfat) 1 cup lowfat yogurt $1\frac{1}{2}$ ounces lowfat natural cheese 2 ounces lowfat processed cheese 1 cup soy-based beverage with added calcium
Meat, poultry, fish, dry beans, eggs, and nuts: 2-3 servings (totals 5-7 ounces per day)	2-3 ounces of cooked lean meat, poultry, or fish $\frac{1}{2}$ cup of cooked dry beans or tofu counts as 1 ounce of lean meat. $2\frac{1}{2}$ ounce soyburger or 1 egg counts as 1 ounce of lean meat. 2 Tbsp of peanut butter or $\frac{1}{3}$ cup of nuts counts as 1 ounce of meat.
Fats, oils, and sweets	Use sparingly. Choose foods lower in fat, saturated fat, <i>trans</i> fat, and cholesterol.

## **Aim for a Healthy Weight**

If you are overweight, taking off pounds can reduce your chances of developing heart disease in several ways. First, losing weight will directly lower your risk. Second, weight loss can help to reduce a number of risk factors for heart disease. It can help to control diabetes as well as reduce high blood pressure and high blood cholesterol. Reaching a healthy weight can also help you to feel better by contributing to sounder sleep, less pain, and more energy to take part in activities you enjoy.

Remember, if you need to lose weight, even a small weight loss will help to lower your risks of heart disease and other serious health conditions. At the very least, you should not gain any additional weight. The more overweight you are, the more likely you are to develop heart disease.

When it comes to weight loss, there are no quick fixes. Successful, lasting weight loss requires a change of lifestyle, not a brief effort to drop pounds quickly. Otherwise, you will probably regain the weight. Aim to lose  $1\frac{1}{2}$  to 2 pounds per week—no more. If you have a lot of weight to lose, ask your doctor, a registered dietitian, or a qualified nutritionist to help you develop a sensible plan for gradual weight loss.

To take off pounds and keep them off, you will need to make changes in both your eating and physical activity habits. Weight control is a question of balance. You take in calories from the food you eat. You burn off calories by physical activity. Cutting down on calories, especially calories from fat, is key to losing weight. Combining this change in diet with a regular physical activity program, such as walking or swimming, can help you both shed pounds and stay trim for the long term.

## *vitamins* FOR HEART HEALTH:

### **Choose Foods, Not Supplements**

You may have read in the news that antioxidant vitamins—particularly vitamins E and beta carotene—may protect against heart disease and stroke. The theory is that antioxidants may prevent the process that converts LDL cholesterol into a form that can clog arteries.

But so far, evidence for the heart health benefits of antioxidants has been disappointing, and most research has shown no benefit for supplements. For instance, the NHLBI-supported “Women’s Angiographic Vitamin and Estrogen” (or “WAVE”) study found that postmenopausal women with heart disease who took antioxidant vitamins C and E either alone or with postmenopausal hormone therapy had as many heart attacks and deaths as postmenopausal women who took placebos.

But studies do suggest that antioxidants in *foods* protect heart health. So it makes sense to eat plenty of foods that are rich in these vitamins. Foods rich in beta carotene are carrots, squash, yams, peaches, apricots, spinach, and broccoli. Rich sources of Vitamin E include vegetable oils (especially safflower and sunflower oils), wheat germ, and leafy green vegetables.

## **Getting Started**

Anyone who has ever tried to lose weight—and keep it off—knows that it can be quite a challenge. Here are some tips to help you succeed:

**Eat for health.** Choose a wide variety of low-calorie, nutritious foods in moderate amounts. Include plenty of vegetables, fruits, whole grains, and skim milk, as well as fish, lean meat, poultry, or beans. Choose foods that are low in fat and added sugars. Choose sensible portion sizes. (See “Portion Distortion” on page 81.)

**Watch calories.** If you are overweight, you are probably wondering how to gauge the number of calories you'll need to cut from your current diet to lose a specific amount of weight over time. Here's a rough guide. If your body mass index (BMI) is 27 to 35 (see BMI chart on page 35), a decrease of 300 to 500 calories per day will result in a weight loss of about ½ to 1 pound per week and a 10 percent weight loss in 6 months. If you have a BMI greater than 35, cutting 500 to 1,000 calories per day will lead to weight loss of about 1 to 2 pounds per week and a 10 percent weight loss in 6 months.

**Keep milk on the menu.** Don't cut out dairy products in trying to reduce calories and fat. Dairy products are rich in calcium, a nutrient that helps to prevent the bone-thinning disease of osteoporosis. Instead, choose lowfat or nonfat dairy products, which have the same amount of calcium as whole-milk products. Make the switch gradually. If you are used to drinking whole milk, first cut back to 2 percent, move to 1 percent, and then to nonfat milk.

**Keep moving.** Physical activity is key to successful, long-term weight loss. It can help you burn calories, trim extra fat from



your waist, and control your appetite. It can also tone your muscles and increase aerobic fitness. Start slowly and gradually build up to at least 30 minutes of physical activity on most, and preferably all, days of the week. For more tips, see “Learn New Moves” on page 84.

**Forget the fads.** Fad diets, including the high-protein, low-carbohydrate diets, are not the answer. As tempting as their promises may be, most quick-fix diets provide poor nutrition and cause many side effects, especially those with less than 800 calories per day. Although fad diets can produce fast results, most of the weight loss is due to water loss. The weight returns quickly once you stop dieting.

**Know about medicines.** If you are very overweight, or if you are overweight and have other weight-related risk factors or diseases, your doctor may advise you to take a medicine to help you take off pounds. You should use a weight-loss drug *only* after you have tried a low-calorie diet, more physical activity, and other lifestyle changes for 6 months without successfully losing weight. Because weight-loss medicines have side effects, you should consider all of the risks and benefits before trying one of them. These drugs should be used alongside a low-calorie eating plan and regular physical activity, not as a substitute for these lifestyle changes.

**Get support.** Tell your family and friends about your weight loss plans and let them know how they can be most helpful to you. Some women also find it useful to join a structured weight loss program. The most effective groups provide support and advice for permanently changing eating and physical activity habits. (See “How To Choose a Weight Loss Program” on page 79.)

**Lock in your losses.** After 6 months of gradually losing weight, switch your efforts to keeping the weight off by continuing to eat a nutritious, lower-calorie diet and getting regular physical activity. After several months of weight maintenance, talk with your health care provider about whether you need to lose additional pounds.

### ***Six Secrets of Successful Weight Management***

If you have ever tried to take off weight, you know that it's more than a matter of promising yourself you'll eat less and move more. You also need to mentally prepare yourself for new behaviors. Here are some tips for getting—and staying—in a healthy weight mindset:

**Set good goals.** Many people set unrealistic goals for the amount of weight they want to lose. But you can greatly improve your health by losing just 5 to 10 percent of your starting weight. While you may choose to lose more weight later, keep in mind that this initial goal is both realistic and valuable. Overall, it's important to set goals that are specific, achievable, and forgiving (allow you to be less than perfect). For example, “exercise more” is a fine goal, but it's not very specific. “Walk 30 minutes every day” is specific and perhaps achievable. But what if you get a bad cold one day, and there's a drenching rainstorm on another? “Walk 30 minutes, 5 days each week” is specific, achievable, and forgiving. A great goal!

**Build on success.** Rather than select one big goal, choose a series of smaller goals that bring you closer and closer to your larger goal. For example, if one of your big goals is to reduce your daily calories from 2,000 to 1,200, first reduce your

calories to 1,700, then move to 1,400, and finally to 1,200. When you experience success at reaching a small goal, it will motivate you to keep moving toward your larger ones.

**Reward yourself!** Rewards that you control can encourage you to achieve your goals. An effective reward is desirable, timely (something you don't put off giving yourself), and dependent on meeting your goal. The reward you choose may be something you buy for yourself or an act of self-kindness, such as an afternoon off from work or an evening spent with a friend. Avoid food as a reward. It usually works better to give yourself frequent, small rewards for reaching short-term goals than bigger rewards that require long, difficult effort.

**Write it down.** Regularly record what you do on your weight loss program, such as your daily calorie intake and exercise sessions, as well as changes in your weight. (Try to weigh yourself at the same time of day once or twice a week.) When you keep track this way, it can help you and your health care provider determine what behaviors you may want to improve. Keeping tabs on your progress can also help you stay motivated.

**Know your triggers.** To lose weight successfully, you need to be aware of your personal eating “triggers.” These are the situations that usually bring on the urge to overeat. For instance, you may get a case of the munchies while watching TV, when you see treats next to the office coffeepot, or when you're with a friend who loves to eat. To “turn off” the trigger, you'll need to make a change in the tempting situation. Example: If treats near the coffeepot are hard to resist, exit the area right after you pour yourself coffee.

**The fine art of feeling full.** Changing the way you eat can help you to eat less without feeling deprived. Eating slowly can help you feel satisfied sooner, and therefore avoid second helpings. Eating lots of vegetables and fruits, and drinking plenty of noncaloric beverages, can also make you feel fuller. Another trick is to use smaller plates so that moderate portions don't seem skimpy. It also helps to set a regular eating schedule, especially if you tend to skip or delay meals.

### ***How To Choose a Weight Loss Program***

Some people lose weight on their own, while others like the support of a structured program. If you decide to join a weight loss program, here are some questions to ask before you join.

- **Does the program provide counseling to help you change your eating and activity habits?**

The program should teach you how to *permanently* change those eating and lifestyle habits, such as lack of physical activity, that have contributed to weight gain.

- **Does the staff include qualified health professionals, such as nutritionists, registered dietitians, doctors, nurses, psychologists, and exercise physiologists?**

Qualified professionals can help you lose weight safely and successfully. You need to be evaluated by a physician if you have any health problems, take or plan to take any medicine, or plan to lose more than 15 to 20 pounds. If your weight control plan uses a very low-calorie diet (a special liquid formula that replaces all food for 1 to 4 months), you will also need an exam and followup visits by a doctor.

- **Does the program offer training on how to deal with times when you may feel stressed and slip back into old habits?**

The program should provide long-term strategies for preventing and coping with possible weight problems in the future. These strategies might include setting up a support system and a regular physical activity routine.

- **Do you help decide on food choices and weight loss goals?**

In setting weight loss goals, the program should consider your personal food likes and dislikes, as well as your lifestyle.

- **Are there fees or costs for additional items, such as dietary supplements?**

You need to know the total costs of participating in the program.

- **How successful is your program?**

Many programs don't gather information on how well they work, but it is worthwhile to ask:

- What percentage of people who start this program complete it?
- What percentage of people experience problems or side effects? What are they?
- What is the average weight loss among those who finish the program?

## *portion* **DISTORTION:**

### **How To Choose Sensible Servings**

It's very easy to "eat with your eyes" and misjudge what equals a serving—and pile on unwanted pounds. This is especially true when you eat out, because restaurant portion sizes have been steadily expanding. Twenty years ago, the average pasta portion size was 2 cups totaling 280 calories; today, it is 4 cups totaling 560 calories! To keep portion sizes sensible:

- When eating out, choose small portion sizes, share an entrée with a friend, or take some of the food home (if you can chill it right away).
- Check product labels to learn how much food is considered a serving and how many calories, fat grams, and so forth are in the food.

Be especially careful to limit portion sizes of high-calorie foods such as cookies, cakes, other sweets, french fries, oils, and spreads.

# THE SUBSTITUTION SOLUTION:

## Making the Switch to Low-Calorie Foods

Here are some tasty, low-calorie alternatives to old favorites. Read labels to find out how many calories are in the specific products you buy.

Instead of	Replace With
<b>Dairy Products</b>	
Whole milk	1% or nonfat milk
Ice cream	Sorbet, sherbet, fat-free frozen yogurt, or reduced fat ice creams
Whipping cream	Imitation whipped cream (made with nonfat milk) or lowfat vanilla yogurt
Sour cream	Plain lowfat yogurt
Cream cheese	Neufchatel cheese, “light” or nonfat cream cheese
Cheese (sandwich types)	Reduced-calorie, low-calorie, or nonfat cheeses
<b>Cereals and Pastas</b>	
Ramen noodles	Rice or pasta
Pasta with cheese sauce	Pasta with red sauce or vegetables
Granola	Bran flakes, crispy rice cereals, cooked grits or oatmeal, reduced-fat granola
<b>Meat, Fish, Poultry</b>	
Cold cuts, hotdogs	Lowfat cold cuts and hotdogs
Bacon or sausage	Canadian bacon or lean ham
Regular ground beef	Extra-lean ground beef or ground turkey

Instead of	Replace With
Chicken or turkey with skin	White-meat chicken or turkey without skin
Oil-packed tuna	Water-packed tuna
Beef (chuck, rib, brisket)	Beef (round, loin), with fat trimmed off. Choose select grades.
Pork (spareribs, untrimmed loin)	Pork tenderloin, trimmed, lean smoked ham
Whole eggs	Egg whites
<b>Baked Goods</b>	
Croissants, brioches, etc.	Hard French rolls or “brown ‘n serve” rolls
Donuts, sweet rolls, muffins	English muffins, bagels, reduced-fat or fat-free muffins
Cake (pound, layer)	Cake (angel food, gingerbread)
Cookies	Reduced-fat or fat-free cookies (graham crackers, ginger snaps, fig bars)
<b>Fats, Oils, Salad Dressings</b>	
Regular margarine or butter	Light-spread, reduced-calorie, or diet margarines. Look for “trans fat-free” margarines.
Regular mayonnaise	Light or diet mayonnaise
Regular salad dressings	Reduced-calorie or fat-free dressings, lemon juice, vinegars
Butter or margarine on toast	Jelly, jam, or honey on toast
Oils, shortening, or lard	Nonstick cooking spray

## Learn New Moves

Regular physical activity is a powerful way to reduce your risk of heart disease. Physical activity directly helps to prevent heart problems. Staying active also helps to prevent and control high blood pressure, keep cholesterol levels healthy, and prevent and control diabetes. Plus, regular physical activity is a great way to help take off extra pounds—and keep them off.

For women who have heart disease, regular, moderate physical activity lowers the risk of death from heart-related causes. If you have already had a heart attack, you still can benefit greatly from becoming more active. Many hospitals offer cardiac (heart) rehabilitation programs that include a wide range of physical activities. Ask your doctor for advice about the best program for you.

Regular physical activity has a host of other health benefits. It may help to prevent cancers of the breast, uterus, and colon. Staying active also strengthens the lungs, tones the muscles, keeps the joints in good condition, improves balance, and may slow bone loss. It also helps many people sleep better, feel less depressed, cope better with stress and anxiety, and generally feel more relaxed and energetic.

Women can benefit from physical activity at any age. In fact, staying active can help prevent, delay, or improve many age-related disabilities. Older women in particular may benefit from weight-bearing activities, which keep bones healthier. Good weight-bearing activities include carrying groceries, walking, jogging, and lifting weights. (Start with 1- to 2-pound hand weights and gradually progress to heavier weights.)

Activities that promote flexibility and balance also are important, especially for older women. Practices such as T'ai Chi and yoga can improve balance and flexibility and can be done alternately with heart healthy physical activities. Check with your local recreation center, YWCA or YMCA, or adult-education program for low-cost classes in your area.

### ***A Little Activity Goes a Long Way***

The good news is that to reap benefits from physical activity, you don't have to run a marathon—or anything close to it. In fact, you need only do about 30 minutes of moderate activity on most, and preferably all, days of the week.

Brisk walking (3 to 4 miles per hour) is an easy way to help keep your heart healthy. One study, for example, showed that regular, brisk walking reduced women's risk of heart attack by the same amount as more vigorous exercise, such as jogging. To make regular activity a pleasure rather than a chore, choose activities you enjoy. Ride your bike. Go hiking. Dance. Golf. Swim. And keep doing physical tasks around the house and yard. Trim your hedges with hand clippers. Rake leaves. Climb stairs. Mulch your garden. Paint a room.

You can do an activity for 30 minutes at one time, or choose shorter periods of at least 10 minutes each. For example, you could spend 10 minutes walking on your lunch break, another 10 minutes raking leaves in the backyard, and another 10 minutes lifting weights. The important thing is to total about 30 minutes of activity each day.

If you haven't been physically active for some time, don't let that stop you. Start slowly and gradually increase to the recommended goal. For example, if you want to begin walking regularly, begin with a 10-15 minute walk three times a week. As you become more fit, you can increase the number of sessions until you're doing something every day. Gradually, lengthen each walking session and quicken your pace. Before long, you will have reached your heart healthy goal—walking briskly for at least 30 minutes on most or all days of the week. (See “A Sample Walking Program” on page 90.)

### ***Making Opportunities***

Getting regular physical activity can be easy—especially if you take advantage of everyday opportunities to move around. For example:

- Use stairs—both up and down—instead of elevators. Start with one flight of stairs and gradually build up to more.
- Park a few blocks from the office or store and walk the rest of the way. If you take public transportation, get off a stop or two early and walk a few blocks.
- Instead of eating that rich dessert or extra snack, take a brisk stroll around the neighborhood.
- Do housework, such as vacuuming, at a brisker pace.
- Walk around the airport, train, or bus station rather than sitting and waiting.
- Keep moving while you watch TV—lift hand weights, do some gentle stretching, or pedal an exercise bike.
- Take a movement break in the middle of the day. Get up and stretch, walk around, and give your muscles and mind a chance to relax.

## **Safe Moves**

Some people should get medical advice before starting regular physical activity. Check with your doctor if you:

- Are over 50 years old and not used to moderately energetic activity.
- Currently have heart trouble or have had a heart attack.
- Have a parent or sibling who developed heart disease at an early age.
- Have a chronic health problem, such as high blood pressure, diabetes, osteoporosis, or obesity.

Once you get started, keep these guidelines in mind:

**Go slow.** Before each activity session, allow a 5-minute period of stretching and slow movement to give your muscles a chance to warm up. At the end of your activity, take another 5 minutes to cool down with a slower, less energetic pace.

**Listen to your body.** A certain amount of stiffness is normal at first. But if you hurt a joint or pull a muscle, stop the activity for several days to avoid more serious injury. Rest and over-the-counter painkillers can heal most minor muscle and joint problems.

**Check the weather report.** Dress appropriately for hot, humid days and for cold days. In all weather, drink lots of water before, during, and after physical activity.

**Pay attention to warning signals.** While physical activity can strengthen your heart, some types of activity may worsen existing heart problems. Warning signals include sudden dizziness, cold sweat, paleness, fainting, or pain or pressure in your upper body just after doing a physical activity. If you notice any of these signs, call your doctor right away.

**Use caution.** If you're concerned about the safety of your surroundings, pair up with a buddy for outdoor activities. Walk, bike, or jog during daylight hours.

**Keep at it.** Unless you have to stop your activity for a health reason, stick with it. If you feel like giving up because you think you're not going as fast or as far as you should, set smaller, short-term goals for yourself. If you find yourself becoming bored, try doing an activity with a friend. Or switch to another activity. The tremendous health benefits of regular, moderate physical activity are well worth the effort.

### **No Excuses!**

We all have reasons to stay inactive. But with a little thought and planning, you can overcome most obstacles to physical activity. For example:

**"I don't have time to exercise."** While physical activity does take time, you can reduce your heart disease risk by getting only 30 minutes of moderate activity on most days of the week. Plus, you can save time by doubling up on some activities. For example, you can ride an exercise bike or use hand weights while watching TV. Or, you can transform some of your everyday chores—like washing your car or walking the dog—into heart healthy activities by doing them more briskly than usual.

**“I don’t like to exercise.”** You may have bad memories of doing situps or running in high school, sweating, puffing, and panting. Now we know that you can get plenty of gain without pain. Activities you already do, such as gardening or walking, can improve your health. So just do more of the activities you like.

**“I don’t have the energy to be more active.”** Get active first—and watch your energy soar. Once you begin regular physical activity, you will almost certainly feel stronger and more vigorous. As you progress, daily tasks will seem easier.

**“I keep forgetting to exercise.”** Leave your sneakers near the door to remind yourself to walk, or bring a change of clothes to work and head straight for the gym, yoga class, or walking trail on the way home. Put a note on your calendar to remind yourself to exercise. While you’re at it, get in the habit of adding more activity to your daily routine.

**Move It and Lose It**

Activity	Calories Burned Per Hour*
Walking, 2 mph	240
Walking, 3 mph	320
Walking, 4.5 mph	440
Bicycling, 6 mph	240
Bicycling, 12 mph	410
Tennis, singles	400
Swimming, 25 yds per minute	275
Swimming, 50 yds per minute	500
Hiking and backpacking	408
Cross-country skiing	700
Jumping rope	750
Jogging, 5.5 mph	740
Jogging, 7 mph	920

*\* For a healthy, 150-pound woman. A lighter person burns fewer calories; a heavier person burns more.*

# A SAMPLE WALKING PROGRAM

Warm Up	Activity	Cool Down	Total Time
<b>Week 1</b> Session A Walk slowly 5 min.   Walk briskly 5 min.   Walk slowly 5 min.   15 min. Session B—Repeat above pattern. Session C—Repeat above pattern. <i>Continue with at least three exercise sessions during each week of the program.</i>			
<b>Week 2</b> Walk slowly 5 min.	Walk briskly 7 min.	Walk slowly 5 min.	17 min.
<b>Week 3</b> Walk slowly 5 min.	Walk briskly 9 min.	Walk slowly 5 min.	19 min.
<b>Week 4</b> Walk slowly 5 min.	Walk briskly 11 min.	Walk slowly 5 min.	21 min.
<b>Week 5</b> Walk slowly 5 min.	Walk briskly 13 min.	Walk slowly 5 min.	23 min.
<b>Week 6</b> Walk slowly 5 min.	Walk briskly 15 min.	Walk slowly 5 min.	25 min.
<b>Week 7</b> Walk slowly 5 min.	Walk briskly 18 min.	Walk slowly 5 min.	28 min.
<b>Week 8</b> Walk slowly 5 min.	Walk briskly 20 min.	Walk slowly 5 min.	30 min.
<b>Week 9</b> Walk slowly 5 min.	Walk briskly 23 min.	Walk slowly 5 min.	33 min.
<b>Week 10</b> Walk slowly 5 min.	Walk briskly 26 min.	Walk slowly 5 min.	36 min.
<b>Week 11</b> Walk slowly 5 min.	Walk briskly 28 min.	Walk slowly 5 min.	38 min.
<b>Week 12 on:</b> Walk slowly 5 min.	Walk briskly 30 min.	Walk slowly 5 min.	40 min.

## Kick the Smoking Habit

The good news is that quitting smoking greatly reduces your risk of heart disease and other serious disorders. Just 1 year after you stop smoking, your heart disease risk will drop by more than half. Within several years, it will approach the heart disease risk of someone who has never smoked. No matter how long you have been smoking, quitting will lessen your chances of developing heart disease.

If you already have heart disease, giving up cigarettes will lower your risk of a heart attack. Quitting also reduces the risk of a second heart attack in women who have already had one. There is nothing easy about giving up cigarettes. But with support and a plan of action, you *can* do it.

## Getting Ready To Quit

- **Get motivated.** Take some time to think about all the benefits of being “smoke free.” Besides the health benefits of quitting, what else do you have to gain? Money saved from not buying cigarettes? Loved ones no longer exposed to secondhand smoke? A better appearance? No more standing outside in the cold or rain for a smoke? Write down all of the reasons you want to stop smoking.
- **Sign on the dotted line.** Write a brief contract that states your intention to stop smoking, your quitting date, and some ways you plan to reward yourself for becoming an exsmoker. Have someone sign it with you.
- **Line up support.** Ask the person who cosigns your contract—or another friend or family member—to give you special support in your efforts to quit. Plan to get in touch with your support person regularly to share your progress and to get encouragement. If possible, quit with a friend or spouse.

"FIVE YEARS AGO, I WAS DRIVING WITH MY  
SISTER WHEN I BEGAN HAVING SHOULDER PAIN.  
SHE HAD EXPERIENCED A HEART ATTACK TWO  
WEEKS EARLIER, SO SHE DROVE STRAIGHT TO  
THE HOSPITAL. SURE ENOUGH, I WAS HAVING A  
HEART ATTACK. I HAD NO CHOICE BUT TO  
CHANGE EVERYTHING IN MY LIFE. I QUIT SMOKING,  
I EXERCISE, AND I EAT HEALTHY NOW."

— Joan Hamilton, age 52

"NOW OUR WHOLE FAMILY EATS  
HEALTHIER AND WORKS OUT  
TOGETHER, SINCE WE HAVE  
THIS FAMILY HISTORY."

— Bonnie Brown, age 49



## **Breaking the Habit**

- **Know yourself.** To quit successfully, you need to know your personal smoking “triggers.” These are the situations and feelings that usually bring on the urge to light up. Some common triggers are drinking coffee, having an alcoholic drink, talking on the phone, watching someone else smoke, and experiencing stress. Make a list of your own personal triggers. Especially during the first weeks after quitting, try to avoid as many triggers as you can.
- **Find new habits.** Replace your “triggers” with new activities that you don’t associate with smoking. For example, if you have always had a cigarette with a cup of coffee, switch to tea for a while. If stress is a trigger for you, try a relaxation exercise such as deep breathing to calm yourself. (Take a slow, deep breath, count to five, and release it. Repeat 10 times.)
- **Keep busy.** Get involved in activities that require you to use your hands, such as needlework, jigsaw puzzles, or fix-up projects around your house or apartment. When you feel the urge to put something in your mouth, try some vegetable sticks, apple slices, or sugarless gum. Some people find it helpful to inhale on a straw or chew on a toothpick until the urge passes.
- **Keep moving.** Walk, garden, bike, or do some yoga stretches. Physical activity will make you feel better and help prevent weight gain.
- **Know what to expect.** During the first weeks after quitting, you may experience temporary withdrawal symptoms, such as headaches, irritability, tiredness, and trouble concentrating. While these feelings are not pleasant, it is important to know that they are signs that your body is recovering from smoking. Most symptoms end within 2 to 4 weeks.

- **Ask for help.** Several free or low-cost programs are available to help people stop smoking. They include programs offered by local chapters of the American Lung Association and the American Cancer Society. Other low-cost programs can be found through hospitals, health maintenance organizations (HMOs), workplaces, and community groups. Some programs offer special support groups for women.
- **Be good to yourself.** Get plenty of rest, drink lots of water, and eat three healthy meals each day. If you are not as productive or cheerful as usual during the first weeks after quitting, be gentle with yourself. Give yourself a chance to adjust to your new nonsmoking lifestyle. Congratulate yourself for making a major, positive change in your life.

### ***If You “Slip”***

A slip means that you have had a small setback and smoked a cigarette after your quit date. Most smokers slip three to five times before they quit for good. To get right back on the nonsmoking track:

- **Don’t be discouraged.** Having a cigarette or two doesn’t mean you can’t quit smoking. A slip happens to many, many people who successfully quit. Keep thinking of yourself as a nonsmoker. You are one.
- **Learn from experience.** What was the trigger that made you light up? Were you driving home from work, having a glass of wine at a party, feeling angry with your boss? Think back on the day’s events until you remember what the trigger was.
- **Take charge.** Write a list of things you will do the next time you face that “trigger” situation—and other tempting situations as well. Sign a new contract with your support person to show yourself how determined you are to kick the habit. You’re on your way.

## *five* AIDS FOR QUITTING

As you prepare to quit smoking, consider using a medication that can help you stay off cigarettes. Some of these medications contain very small amounts of nicotine, which can help to lessen the urge to smoke. They include nicotine gum (available over-the-counter), the nicotine patch (available over-the-counter and by prescription), a nicotine inhaler (by prescription only), and a nicotine nasal spray (by prescription only). Another quitting aid is Bupropion SR, a medicine that contains no nicotine but reduces the craving for cigarettes. It is available only by prescription. While all of these medications can help people to stop smoking, they are not safe for everyone. Talk with your doctor about whether you should try any of these aids.

## A WEIGHTY *concern*

Many women fear that if they stop smoking, they will gain unwanted weight. But most exsmokers gain less than 10 pounds. Weight gain may be partly due to changes in the way the body uses calories after smoking stops. Some people also may gain weight because they substitute high-calorie food for cigarettes. Choosing more lower-calorie foods and getting more physical activity can reduce the amount of weight you gain.

If you do put on some weight, you can work on losing it after you have become comfortable as a nonsmoker. When you consider the serious health risks of smoking, the possibility of gaining a few pounds is no reason to continue.

## FOR WOMEN *who* HAVE HEART DISEASE

If you have heart disease, it is extremely important to control it. Eating well, getting regular physical activity, and maintaining a healthy weight will help to lessen the severity of your condition. If you smoke, you'll need to quit. And if you have diabetes, you will need to carefully manage it.

You also may need certain tests, medications, or special procedures. This section explains these and how each can help to protect your heart health.

### Screening Tests

In most cases, you will need some tests to find out for sure if you have heart disease and how severe it is. If your doctor doesn't mention tests, be sure to ask whether they could be helpful. Most screening tests are done outside the body and are painless. After taking a careful medical history and doing a physical examination, your doctor may give you one or more of the following:

**Electrocardiogram** (ECG or EKG) makes a graph of the heart's electrical activity as it beats. This test can show abnormal heartbeats, heart muscle damage, blood flow problems in the coronary arteries, and heart enlargement.

**Stress test** (or treadmill test or exercise ECG) records the heart's electrical activity during exercise, usually on a treadmill or exercise bike. If you are unable to exercise due to arthritis or another health condition, a stress test can be done without exercise. Instead, you can take a medicine that increases blood flow to the heart muscle and shows if there are any problems in that flow.

**Nuclear scan** (or thallium stress test) shows the working of the heart muscle as blood flows through the heart. A small amount of radioactive material is injected into a vein, usually in the arm, and a camera records how much is taken up by the heart muscle.

**Echocardiography** changes sound waves into pictures that show the heart's size, shape, and movement. The sound waves also can be used to see how much blood is pumped out by the heart when it contracts.

**Coronary angiography** (or angiogram or arteriography) shows an x ray of blood flow problems and blockages in the coronary arteries. A thin, flexible tube, or catheter, is threaded through an artery of an arm or leg up into the heart. A fluid is then injected into the tube, allowing the heart and blood vessels to be filmed as the heart pumps. The picture is called an angiogram or arteriogram.

**Ventriculogram** is a picture of the heart's main pumping chamber, the left ventricle. The procedure is similar to the one described for coronary angiography, but the catheter is put in the left ventricle.

**Intracoronary ultrasound** uses a catheter that measures blood flow. It gives a picture of the coronary arteries that shows the thickness and other features of the artery wall. This lets the doctor see blood flow and any blockages.

In addition, several new, highly sensitive screening tests have been developed. Ask your doctor about these three:

**Carotid doppler ultrasound** uses sound waves to detect blockages and narrowing of the carotid artery, both of which can lead to a heart attack or stroke.

**Electron-beam computed tomography (EBCT)** is a superfast scan that provides a snapshot of the calcium buildup in your coronary arteries. It can pick up heart disease before you feel any symptoms.

**High-sensitivity C-reactive protein blood test** measures the level of this protein in your blood. High levels mean inflammation in the artery walls, which may raise your heart disease risk.

## Medications

To control or prevent heart disease, you may need to take medicine. Medications may be used to treat a risk factor such as high blood pressure or high blood cholesterol, or relieve the chest pain that often accompanies heart disease. If you do take medicine, it's important to keep up your heart healthy lifestyle, because healthy daily habits will keep your dose of medicine as low as possible. Drugs include:

**Digitalis** makes the heart contract harder and is used when the heart can't pump strongly enough on its own. It also slows down some fast heart rhythms.

**ACE (angiotensin converting enzyme) inhibitors** stop the body from producing a chemical that narrows blood vessels. They are used to treat high blood pressure and damaged heart muscle. They also can prevent kidney damage in some people with diabetes.

**Beta blockers** slow the heart and allow it to beat with less force. They are used for high blood pressure, chest pain, and to prevent a repeat heart attack.

**Nitrates** (including nitroglycerine) relax blood vessels and relieve chest pain.

**Calcium-channel blockers** relax blood vessels. They are used for high blood pressure and chest pain.

**Diuretics** ("water pills") decrease fluid in the body and are used for high blood pressure.

**Blood cholesterol-lowering drugs** decrease LDL levels in the blood. Some also can increase HDL, or "good" cholesterol. (See "Cholesterol-Lowering Medicines" on page 32.)

## *aspirin:* **TAKE WITH CAUTION**

This well-known “wonder drug” can help to lower the risk of a heart attack or stroke for those who have already had one. It can also help to keep arteries open in those who have had a previous heart bypass or other artery-opening procedure, such as angioplasty. In addition, aspirin is given to people who arrive at a hospital emergency department with a suspected heart attack or stroke.

However, aspirin is not approved by the Food and Drug Administration for the prevention of heart attacks in those who have never had a heart attack or stroke. It may even be harmful, especially for those with no heart disease risk. Take daily aspirin to prevent heart disease only with your doctor’s specific recommendation and guidance.

Aspirin is a powerful drug with many side effects. It can increase your chances of getting ulcers, kidney disease, liver disease, and stroke from a hemorrhage. It can also mix dangerously with other drugs, including some over-the-counter medicines and dietary supplements.

If you’re thinking about using aspirin to treat or prevent heart problems, talk with your doctor first. Only a doctor who knows your medical history and current health condition can judge whether the benefits would outweigh the risks. If aspirin is a good choice for you, be sure to take the dose recommended by your doctor.

**Aspirin** can be helpful to some women with heart disease but is not recommended for most healthy women. (See box on page 99.)

**Menopausal hormone therapy** was once thought to lower the risk of heart attack and stroke for women with heart disease. But research now shows that women with heart disease should not take it. Menopausal hormone therapy can involve the use of estrogen alone or estrogen plus progestin. For women with heart disease, estrogen alone will not prevent heart attacks, and estrogen plus progestin increases the risk for heart attack during the first few years of use. Estrogen plus progestin also increases the risk for blood clots, stroke, and breast cancer.

### **Special Procedures**

Advanced heart disease may require special procedures to open an artery and improve blood flow. These are usually done to ease severe chest pain or clear blood vessel blockages. They include:

**Coronary angioplasty, or balloon angioplasty.** In this procedure, a fine tube, or catheter, is threaded through an artery into the narrowed heart vessel. The catheter has a tiny balloon at its tip, which is repeatedly inflated and deflated to open and stretch the artery, improving blood flow. Often, a tiny tube called a stent is permanently inserted in the artery to keep it open.

### **Coronary artery bypass graft, or “bypass surgery.”**

A piece of vein is taken from the leg or a section of an artery is taken from the chest or wrist. This piece is attached to the heart artery both above and below the narrowed area, making a bypass around the blockage.



DEBBIE

AGE: 51

"My children understand that heredity puts them at risk for a heart attack and are conscious of their lifestyles. Maybe that's the upside of a really bad situation—my kids have changed what they're doing in their lives. And I have, too."

## GETTING HELP FOR A *heart* ATTACK

For many people, the first symptom of heart disease is a heart attack. Therefore, every woman should know how to identify the symptoms of a heart attack and how to get immediate medical help. Ideally, treatment should start within 1 hour of the first symptoms. Recognizing the warning signs, and getting help quickly, can save your life.

### Know the Warning Signs

Not all heart attacks begin with sudden, crushing pain, as is often shown on TV or in the movies. Many heart attacks start slowly as mild pain or discomfort. The most common warning signs for men and women are:

- **Chest discomfort.** Most heart attacks involve discomfort in the center of the chest that lasts more than a few minutes. It may feel like uncomfortable pressure, squeezing, fullness, or pain. The discomfort can be mild or severe, and it may come and go.
- **Discomfort in other areas of the upper body,** including one or both arms, the back, neck, jaw, or stomach.
- **Shortness of breath.** May occur along with or without chest discomfort.
- **Other signs** include nausea, light-headedness, or breaking out in a cold sweat.

## Get Help Quickly

If you think you, or someone else, may be having a heart attack, you must act quickly to prevent disability or death. Wait no more than a few minutes—5 at most—before calling 9-1-1.

It is important to call 9-1-1 because emergency medical personnel can begin treatment even before you get to the hospital. They also have the equipment and training to start your heart beating again if it stops. Calling 9-1-1 quickly can save your life.

Even if you're not sure you're having a heart attack, call 9-1-1 if your symptoms last up to 5 minutes. If your symptoms stop completely in less than 5 minutes, you should still call your doctor.

You also must act at once because hospitals have clot-busting medicines and other artery-opening treatments and procedures that can stop a heart attack, if given quickly. These treatments work best when given within the first hour after a heart attack starts.

Women tend to delay longer than men in getting help for a possible heart attack. Many women delay because they don't want to bother or worry others, especially if their symptoms turn out to be a "false alarm." But when you're facing something as serious as a possible heart attack, it is much better to be safe than sorry. If you have any symptoms of a possible heart attack that last up to 5 minutes, call 9-1-1 right away.

When you get to the hospital, don't be afraid to speak up for what you need—or bring someone who can speak up for you. Ask for tests that can determine if you are having a heart attack. Commonly given tests include an electrocardiogram (EKG or ECG), a cardiac enzyme blood test, a nuclear scan, and a coronary angiogram (or

arteriogram). At the hospital, don't let anyone tell you that your symptoms are "just indigestion" or that you're overreacting. You have the right to be thoroughly examined for a possible heart attack. If you are having a heart attack, you have the right to immediate treatment to help stop the attack.

### **Plan Ahead**

Nobody plans on having a heart attack. But just as many people have a plan in case of fire, it is important to develop a plan to deal with a possible heart attack. Taking the following steps can preserve your health—and your life.

- Learn the heart attack warning signs "by heart."
- Talk with family and friends about the warning signs and the need to call 9-1-1 quickly.
- Talk with your health care provider about your risk factors for heart attack and how to reduce them.
- Write out a "heart attack survival plan" that has vital medical information and keep it handy. (Use the accompanying box on page 104 as a guide.)
- Arrange in advance to have someone care for your children or other dependents in an emergency.

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**If you think you, or someone else, may be having a heart attack, you must act quickly to prevent disability or death. Wait no more than a few minutes—5 at most—before calling 9-1-1.**

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# HEART ATTACK *survival* PLAN

Fill out the form below and make several copies of it. Keep one copy near your home phone, another at work, and a third copy in your wallet or purse.

## Information To Share With Emergency Medical Personnel and Hospital Staff

Medicines you are taking: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Medicines you are allergic to: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## How To Contact Your Health Care Provider

If symptoms stop completely in less than 5 minutes, you should still call your health care provider.

Phone number during office hours: \_\_\_\_\_

Phone number after office hours: \_\_\_\_\_

## Person To Contact If You Go To The Hospital

Name: \_\_\_\_\_

Home phone number: \_\_\_\_\_

Work phone number: \_\_\_\_\_

## THE HEART OF THE *matter*

Getting serious about heart health may seem like a huge project. Because it means making changes in daily living habits, for many women it is a major effort. But it doesn't have to be an overwhelming one. Some people find it easier to tackle only one habit at a time. For example, if you smoke cigarettes and also eat a diet high in saturated fats, work on kicking the smoking habit first. Then, once you have gotten used to life without cigarettes, begin to skim the fat from your diet.

And remember, nobody's perfect. Nobody always eats the ideal diet or gets just the right amount of physical activity. Few smokers are able to swear off cigarettes without a slip or two along the way. The important thing is to follow a sensible, realistic plan that will gradually lessen your chances of developing heart disease, or help you to control it.

Women are taking a more active role in their own health care. We are asking more questions, and we are readier than ever to make changes that will help us lead healthier lives. We are concerned not only about treatment, but also about the prevention of many disorders that commonly strike women. Taking steps to control and prevent heart disease is part of this growing movement to take charge of our own health. The reward of a healthy heart—a better chance for a longer, more vigorous life—is well worth the effort.

## HOW TO ESTIMATE YOUR *risk*

(Framingham Heart Study Point Scores)

Use these risk tables to find your chances of having a heart attack in the next 10 years, given as a percentage. (For more on this, see page 29.)

Points		Points	
Age 20-34	-7	Age 55-59	8
Age 35-39	-3	Age 60-64	10
Age 40-44	0	Age 65-69	12
Age 45-49	3	Age 70-74	14
Age 50-54	6	Age 75-79	16

Total Cholesterol	Points				
	Age 20-39	Age 40-49	Age 50-59	Age 60-69	Age 70-79
<160	0	0	0	0	0
160-199	4	3	2	1	1
200-239	8	6	4	2	1
240-279	11	8	5	3	2
≥280	13	10	7	4	2

	Points				
	Age 20-39	Age 40-49	Age 50-59	Age 60-69	Age 70-79
Nonsmoker	0	0	0	0	0
Smoker	9	7	4	2	1

HDL (mg/dL)	Points	HDL (mg/dL)	Points
≥60	-1	40-49	1
50-59	0	<40	2

Systolic BP (mmHg)	Points		Systolic BP (mmHg)	Points	
	If Untreated	If Treated		If Untreated	If Treated
<120	0	0	140-159	3	5
120-129	1	3	≥ 160	4	6
130-139	2	4			

Point Total	10-Year Risk %	Point Total	10-Year Risk %	Point Total	10-Year Risk %
<9	<1	14	2	20	11
9	1	15	3	21	14
10	1	16	4	22	17
11	1	17	5	23	22
12	1	18	6	24	27
13	2	19	8	≥25	≥30

## TO *learn* MORE

To find out more about preventing and controlling heart disease, contact the following information sources:

### **NHLBI Health Information Center**

P.O. Box 30105  
Bethesda, MD 20824-0105  
Phone: 301-592-8573  
TTY: 240-629-3255  
Fax: 301-592-8563

### **NHLBI Heart Health Information Line**

1-800-575-WELL  
Provides toll-free recorded messages  
with special information for women.

Provides information on the prevention and treatment of heart disease and offers publications on heart disease and heart health.

### **Also, check out these NHLBI heart health Web sites and Web pages:**

NHLBI Web site: **[www.nhlbi.nih.gov](http://www.nhlbi.nih.gov)**

*The Heart Truth*: A National Awareness Campaign on Women and Heart Disease:  
**[www.hearttruth.gov](http://www.hearttruth.gov)**

Your Guide to Lowering High Blood Pressure: **[www.nhlbi.nih.gov/hbp/index.html](http://www.nhlbi.nih.gov/hbp/index.html)**

Live Healthier, Live Longer (on lowering elevated blood cholesterol):  
**[www.nhlbi.nih.gov/chd](http://www.nhlbi.nih.gov/chd)**

High Blood Cholesterol: What You Need To Know:  
**[www.nhlbi.nih.gov/health/public/heart/chol/hbc\\_what.htm](http://www.nhlbi.nih.gov/health/public/heart/chol/hbc_what.htm)**

Aim for a Healthy Weight:  
**[www.nhlbi.nih.gov/health/public/heart/obesity/lose\\_wt/index.htm](http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/index.htm)**

Act in Time to Heart Attack Signs: **[www.nhlbi.nih.gov/actintime/index.htm](http://www.nhlbi.nih.gov/actintime/index.htm)**

Stay Young at Heart Recipes:  
**[www.nhlbi.nih.gov/health/public/heart/other/syah/index.htm](http://www.nhlbi.nih.gov/health/public/heart/other/syah/index.htm)**

### **Additional Resources:**

American Heart Association: **[www.americanheart.org](http://www.americanheart.org)**

National Women's Health Information Center, Office on Women's Health,  
U.S. Department of Health and Human Services: **[www.4woman.gov](http://www.4woman.gov)**

WomenHeart: the National Coalition for Women with Heart Disease:  
**[www.womenheart.org](http://www.womenheart.org)**



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